



United States Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
3500 Delwood Beach Rd
Panama City, FL 32408

Southeast Fisheries Observer Programs: Gillnet & Shark Directed Bottom Longline

NOAA Fisheries Panama City Laboratory



United States Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
3500 Delwood Beach Rd
Panama City, FL 32408

Name: xxx

Certification date: mm/dd/yy

To Whom It May Concern:

This letter serves as a formal document that recognizes the person, **xxxxxxx**, as a certified observer. This observer is employed by IAP World Services, but is a representative of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Southeast Fisheries Science Center (SEFSC), through a contractual agreement.

This individual is responsible for the collection of scientific and biological data while deployed aboard any U.S. flagged vessel. If the vessel has been selected by the Southeast Regional Office or the Southeast Fisheries Science Center to carry an observer for the mandatory collection of data, the data collected must be turned over to an authorized enforcement officer upon request, and is accessible to authorized enforcement personnel for the investigation of violations. If the vessel is carrying an observer collecting data on a voluntary basis, the data collected must be turned over to an authorized enforcement officer upon request, but cannot be used for the investigation of any violation without the concurrence of the National Marine Fisheries Service Southeast Regional Director. Captains or owners wishing to have copies of the observer's trip data sheets may request them from the observer or from the Southeast Fisheries Science Center.

Please extend all formal courtesy to this contractual representative of the National Oceanic and Atmospheric Administration.

Sincerely,

John K. Carlson, Ph.D.
Research Fishery Biologist

Observer Notebook Table of Contents

The following is the itemized list of field instructions, documentation, datasheets, and permits included in the Observer Notebook for an observer at the NOAA Fisheries Panama City Laboratory in Panama City, Florida.

- i. Observer Certification Letter
- ii. Table of Contents
- iii. Observer Program Field Instructions
- iv. Observer Equipment Checklist
- v. Gear Inspection Form
- vi. Satellite Phone Instructions
- vii. Fishing Regulations
 - a. HMS Shark Regulations
 - b. GMFMC Reef Fish Regulations
- viii. Pre-Trip Safety Check Form
- ix. Fisherman's Feedback Form

- 1. SGOP Documentation
 - 1.1. Trip Summary Instructions
 - 1.2. Gear Log Instructions
 - 1.3. Numbered Gear Log
 - 1.4. Haul Log Instructions
 - 1.5. Catch Worksheet Instructions
 - 1.6. Animal Log Instructions

- 2. SGOP Datasheets
 - 2.1. Trip Summary
 - 2.2. Gear Log
 - 2.3. Haul Log
 - 2.4. Catch Worksheet
 - 2.5. Animal Log

- 3. SBLOP Documentation
 - 3.1. Trip Summary Instructions
 - 3.2. Vessel Reimbursement Instructions
 - 3.3. Gear Log Instructions
 - 3.4. Hooks used in longline fishing
 - 3.5. Mustad Commerical Hooks
 - 3.6. Haul Log Instructions
 - 3.7. Animal Log Instructions
 - 3.8. Fisherman Feedback Form

- 4. SBLOP Datasheets
 - 4.1. Trip Summary
 - 4.2. Vessel Reimbursement Form
 - 4.3. Gear Log

- 4.4. Haul Log
- 4.5. Animal Log
- 5. Safety Manual
 - 5.1. Safety Manual Introduction
 - 5.1.1. Emergency Contacts
 - 5.1.2. Medical History Form (fill out and return)
 - 5.2. Personal health and hygiene
 - 5.2.1. Sleep Deprivation
 - 5.2.2. Seasickness
 - 5.2.3. First Aid Kit
 - 5.2.4. IAP Infection and MRSA
 - 5.2.5. IAP Incident Report and Witness Report Forms
 - 5.3. Safety on Vessel
 - 5.3.1. Before deployment on a vessel
 - 5.3.2. Pre-Trip Vessel Safety checklist
 - 5.3.3. Safety aboard vessels
 - 5.3.4. 7 Ways to be Injured
 - 5.3.5. Common injuries
 - 5.3.6. Fish Handling Safety
 - 5.3.7. Types of Emergencies
 - 5.3.8. Preparing for Bad Weather on a Vessel
 - 5.4. Survival Skills
 - 5.5. Safety Equipment
 - 5.5.1. PFD and Immersion Suit Use and Maintenance
 - 5.5.2. Distress Calls and Signals
 - 5.5.3. EPIRB Use and Maintenance
 - 5.6. Man Overboard and Abandon Ship Procedures
 - 5.6.1. Man Overboard
 - 5.6.2. Abandon Ship
 - 5.6.3. Coast Guard Rescue
 - 5.6.4. STAY rules
 - 5.7. Cold water and Hypothermia Survival
 - 5.8. Fire and flood
 - 5.8.1. Vessel stability and Flooding
 - 5.8.2. Fire Prevention and Fighting
 - 5.9. Communication for observers
 - 5.10. Observer Emergency 1st Person Account
- 6. Sampling Procedures
 - 6.1. Shark Sampling Protocol
 - 6.2. Samples Needed this Season
 - 6.3. Samples Taken Form
 - 6.4. Shark Dichotomous Key
 - 6.5. Teleost Sampling Protocol
 - 6.6. Observer Species List

7. Incidental Take

- 7.1. Protected Species Interaction Instructions
- 7.2. Marine Mammal Incidental Take Log Instructions
- 7.3. Marine Mammal Incidental Take Log
- 7.4. Marine Mammal Biological Sample Log Instructions
- 7.5. Marine Mammal Biological Sample Log
- 7.6. Sea Turtle Life History Form Instructions
- 7.7. Sea Turtle Life History Form
- 7.8. Protected Resources Form Instructions
- 7.9. Protected Resources Form

8. Permits

INTRODUCTION AND FIELD INSTRUCTIONS

I. Gillnet Fishery Background:

Previously, the Atlantic Large Whale Take Reduction Plan and the Biological Opinion issued under Section 7 of the Endangered Species Act mandated 100% observer coverage of the southeast shark drift gillnet fishery during the right whale, *Eubalaena glacialis*, calving season (15 Nov-31 Mar). Outside the right whale calving season (1 Apr-14 Nov), an interim final rule (March 30, 2001; 66 FR 17370) to the Fishery Management Plan for Highly Migratory Species (NMFS, 1999) established a level of observer coverage for these vessels equal to that which would attain a sample size needed to provide estimates of sea turtle or marine mammal interactions with an expected coefficient of variation of 0.3.

In 2005, the shark gillnet observer program was expanded to include all vessels that have an active directed shark permit and fish with any gillnet gear. These vessels were not previously subject to observer coverage because they either were targeting non-highly migratory species or were not fishing gillnets in a drift or strike fashion. These vessels were selected for observer coverage in an effort to determine their impact on finetooth shark, *Carcharhinus isodon*, landings and their overall fishing impact on shark resources when the gear is not targeting sharks. In 2006, the National Marine Fisheries Service (NMFS) Southeast Regional Office requested further expansion of the scope of the shark gillnet observer program to include all vessels fishing gillnets regardless of target, and for coverage to be extended to cover the full geographic range of gillnet fishing effort in the southeast United States. This was requested because of the need to monitor (at statistically adequate levels) all gillnet fishing effort to assess risks to right whales and other protected species. Further, in 2007 the regulations implementing the Atlantic Large Whale Take Reduction Plan were amended to include the removal of the mandatory 100% observer coverage for drift gillnet vessels during the right whale calving season and to prohibit all gillnets in an expanded southeast U.S. restricted area from Cape Canaveral, Florida to the North Carolina/South Carolina border during November 15 - April 15. The rule does possess limited exemptions, only in waters south of 29 degrees N latitude, for shark strikenet fishing during this same period and for Spanish mackerel, *Scomberomorus maculatus*, gillnet fishing in the months of December and March. Based on these regulations and on current funding levels, the shark gillnet observer program now covers all anchored (sink, stab, set), strike, or drift gillnet fishing by vessels that fish from Florida to North Carolina and Gulf of Mexico year-round.

Hence, the continuation of the Southeast Gillnet Observer Program (SGOP). This program will be directed by the SE Fisheries Science Center, and will place NMFS /contract observers aboard U.S. gillnet vessels in the southeast US regardless of permit type. These boats will be notified as to their selection in writing by the Panama City Lab staff and are required to respond by phone or fax 2-3 working days prior to all departures during the selection period or until a trip is observed.

II. Gillnet Fishery Observer Program Objectives:

A. Provide trained observer personnel to meet coverage of U.S. Commercial gillnet fleet.

B. Obtain target and bycatch numbers on fish and protected mammal and turtle species caught in gillnet gear.

C. Record length measurements, status, and disposition on all species brought on board, and collect biological and statistical data on marine mammal and turtle species.

D. Record detailed gear characteristics of commercial gillnet vessels.

III. Shark Bottom Longline Fishery Background:

The Atlantic bottom longline fleet is managed under the Atlantic Highly Migratory Species Fishery Management Plan (HMS-FMP) and under the authority of the Magnuson Fishery Conservation and Management Act (Magnuson Act). The HMS-FMP was prepared by the National Marine Fisheries Service (NMFS) with jurisdiction over the U.S. coastal waters of the Northeast Atlantic, the Gulf of Mexico, and the Caribbean Sea out to the Exclusive Economic Zone (EEZ). The Fishery Conservation Amendments of 1990 (FCA) Public Law 101-627 transferred management authority over the Atlantic swordfish fishery to the Secretary of Commerce. The Secretary issued emergency regulations on June 12, 1991, that were consistent with November 1990 recommendation of International Commission for the Conservation of Atlantic Tunas (ICCAT) and were made effective through December 9, 1991.

These regulations were published as a proposed rule on October 23, 1991 (56 FR 54819). Public hearings were held on the proposed rule, and written comments were accepted during a 45-day public comment period ending December 2, 1991.

Modifications over the years were made to the various Fishery Management Plans regulating Atlantic swordfish, sharks, billfish, and tunas which finally culminated into the comprehensive HMS-FMP published in May 28, 1999 with those regulations becoming effected on July 1, 1999. Specific rules are summarized below:

- 1) redefine the swordfish management units to include the North Atlantic Ocean above 5 degrees N latitude and portions of the South Atlantic;
- 2) continue the minimum size limit for swordfish of greater than or equal to 29 inches (73 cm) carcass length or 33 pounds(15 kg) dressed weight;
- 3) establish an annual total allowable catch by gear and pelagic species;
- 4) divide the annual shark directed-fishery quota into three trimesters, January 1 through April 15, July 1 through August 31, and September 1 through December 31;
- 5) specify bycatch limits that apply after a quota closure for purse seine, harpoon, longline, or gillnet;
- 6) require vessel operators to carry NMFS-approved observers on permitted vessels upon the request of NMFS;**

- 7) specify minimum size limits for billfish species for the recreational fishery and prohibit the landing of billfish by commercial fishers;
- 8) establish the categories of small coastal, large coastal, and pelagic shark species with landing prohibitions on selected shark species;
- 9) establish area closures for bluefin tuna and swordfish permits;
- 10) make other changes to facilitate the management of the Atlantic pelagic species.

Hence, the creation of the Shark Bottom Longline Observer Program (SBLOP). This program will be directed by the Southeast Fisheries Science Center, and will place NMFS contract observers aboard U.S. longline vessels that currently hold shark permits. Vessel owners and operators that have a current limited access permit for sharks and fish with a longline gear type are required to carry an observer. These boats will be notified as to their selection in writing by the SEFSC staff and are required to respond initially in writing with requested information and then to contact the coordinator by phone or fax 2-3 working days prior to all departures during the selection period or until a trip is observed.

In 2008 the Sandbar Research Fishery (SRF) was established. NMFS has recently amended regulations for Atlantic shark fisheries based on recent stock assessments. The final measures implement a shark research fishery which allows NMFS to select a limited number of commercial shark vessels on an annual basis to collect life history data and data for future stock assessments. Furthermore, the revised measures affect quotas, retention limits, and authorized species in commercial shark fisheries; affect authorized species in recreational shark fisheries; modify time/area closures for commercial shark vessels deploying bottom longline gear; require that all sharks be landed with all fins naturally attached; and modify regions, seasons, and shark dealer reporting frequency in the commercial shark fishery.

- Required 100% observer coverage.
- Allowed 2 sets: 1 150 hook feeler set with a soak time of 2 hrs
1 300 hook main set with no soak time limitation
- All dead non-prohibited shark species must be retained.
- Only allowed 500 hooks on board at a given time.
- Limit on number of trips per month
- Outside SRF, shark-directed permit holders can catch 36 head non-sandbar LCS per day
- In both, once 80% quota reached, fishery shut down
- All sharks must be landed with fins “naturally attached”
 - Can gut and cut off head
 - Can cut fins to fold them back
- Observers should sample sandbars kept as well as other species kept

IV. Shark Bottom Longline Observer Program Objectives:

- A. Provide trained observer personnel to meet coverage of U.S. Commercial shark longline fleet.

B. Obtain target and bycatch numbers on fish/sharks, and protected species caught in longline gear.

C. Record length measurements on all shark species brought on board, identify discard of finfish species, and collect biological and statistical data fish, sharks, marine mammal, turtle, sawfish, sturgeon and bird species.

D. Record detailed gear characteristics of commercial longline vessels.

E. Observe Shark Research Fishery – data and samples to be used for updating life history studies and stock assessment of sandbar shark

V. OBSERVER DUTIES

Due to liability and safety considerations, **observers will not participate as deck hands during the fishing operations or stand watch.** Observers are encouraged to assist in cleanup duties and lend a hand once operations are secured. Observers will abide by routines aboard the vessel and adopt the habits of crew in use of living space, preparation and consumption of meals, storage of personal gear, personal hygiene and chores.

Observers are provided with the current fisheries regulations. However, **interpretation of these materials will be left to the captain or crew.** Observers will provide access to data collected when requested by any NMFS, Coast Guard, or state official. In the event data is provided to an official, the observer will contact the coordinator and document all materials turned over to the officer.

PROVIDE COPIES OF DATA RATHER THAN ORIGINALS

An additional day will be taken once landing and weigh out is finished to review data forms for completeness, make copies of all data and then arrange for shipping of data and samples. If logistics allow, observers may come through Panama City to debrief with program staff. Otherwise data will be sent **UPS Next Day Air** to the Panama City lab. Once the data is received, coordinators will contact the observer by phone to arrange a time for a debriefing. During debriefing, observers are provided feedback on their data collection, data questions are resolved, information is shared and field supplies are replenished.

YOUR TRIP IS NOT OVER UNTIL YOU COMPLETE A DEBRIEFING WITH YOUR COORDINATOR.

The observer's primary responsibility is to identify and record all animals caught during fishing operations and take required measurements and samples. Work will begin when the haul begins and work terminates when work-up of animals is completed and gear is stowed (generally 8-12 hrs a day). Between haul-backs the observer should rest, eat or sleep. Other duties include recording tagging information and obtaining a copy of the weigh-out sheet from the dealer or

captain.

A. FIELD DIARY:

The field diary should be used to document events or actions that occur during a single deployment and backup data information. Your field diary is an important data element. Include a copy of your field diary for each trip submitted. The field diary can be used for multiple trips, however to ensure individual vessel confidentiality, **observers will remove pages from a completed trip prior to another deployment.** Types of observations include: daily weather and position entries recorded at the same time each day; changes in the gear configuration, travel record and any comments/questions about procedures that may improve data collection. Include set and haulback times and positions and a daily catch summary. Maintain a photo log, radio/cellphone communications and boat or marine mammal sightings.

B. FIELD IDENTIFICATION:

Reference materials are provided to the observer to assist in making accurate identifications of species:

Guide to Sharks, Tunas & Billfishes of the U.S. Atlantic & Gulf of Mexico
Whales, Dolphins, and Porpoises
Peterson Atlantic Coast Fishes
A Field Guide to Coastal Fishes from Maine to Texas
Beached Birds

Photographs will be taken to help staff identify an unknown animal, to document a rare fish, to verify species identification, and document gear involvement of all incidental take (turtles, mammals, sea birds).

If a fish is dead and manageable, an observer should request that it be brought on board to get an actual measurement, biological sample or a better photo opportunity. Unless working on deck is unsafe, observers will record the required measurements for all species brought aboard. The observer will record an estimated length for all released or discarded animals, to the nearest foot and convert to cm on the data form. If species identity is in question, record the known species name (e.g. BIL), take enough photos (at least 2) showing prominent features.

DO NOT HANDLE LIVE SHARKS AND RAYS

Photos of the boat, gear and fishing operations can be useful. However these photos will not be taken without with the captain's permission and are only be used during training or briefing sessions. Photos are to be turned over to the observer coordinator after a trip.

All photos are property of the observer program and are to be deleted after the trip.

C. BIOLOGICAL SAMPLING:

All observers are required to collect biological samples that may include shark vertebrae, gonads, DNA fin clips, and stomachs to maintain our shark life history study or other special sampling requests.

Sampling will not be done unless proper equipment, training, protocols, and permits have been provided. Whole specimens may be requested to be brought back to the dock but should only be shipped with the coordinators' authorization.

REVIEW BIOLOGICAL SAMPLING REQUIREMENTS EACH SEASON FOR CURRENT SAMPLING PROTOCOLS AND SAMPLE REQUESTS.

Whole fish specimens or fish parts should be placed in multiple plastic bags and stored on ice or kept frozen. **An inner waterproof sample label will be included with all biological samples collected.** Use pencil provided to fill out the waterproof labels. Each sample bag should be labeled on the outside as well using sharpie. Each sample should be labeled with the obs/trip ID, haul number, specimen number, species abbreviation, and tissue type (ex. vertebrae, gonad) for each fish sampled. Combine the smaller bags and triple bag in larger plastic bags.

REVIEW SHIPPING PROTOCOL IN SAMPLING SECTION FOR PROPER SHIPPING METHODS

D. TAGGING:

1. Tag Recaptures:

For a tag recapture animal, special biological sampling is required. All tag recapture fish are important. However, never sacrifice a live fish to recover a tag. If a tagged animal is brought on board and will be kept, record the tag number, species, length, sex, location of capture, and date. If it is a shark, a vertebrae sample is imperative since the animal may have been marked for age and growth studies.

2. Tag Deployment:

If a healthy shark is captured and will be released, place a shark tag into the animal (as demonstrated in training) and record the species, estimated length, sex, location of release, and date on the data sheet. **BE SURE TO RECORD THE TAG NUMBER ONCE DEPLOYED.**

Special instructions for tag deployment will be provided with satellite tags.

E. INCIDENTAL TAKE:

A priority for the observer is the reporting of and the collection of marine mammal, sea bird, or sea turtle biological material.

Any live marine turtle is to be released from entrapment **by the crew** as quickly and with as little gear associated with the animal as possible. Any comatose or dead marine turtle encountered, the observer should request the captain to bring the animal aboard and follow procedures explained during the training sessions (resuscitation, measurements, tagging, etc). See the **INCIDENTALS** section of the manual for datasheets, identification guides, and instructions.

For any marine mammal and especially for large whales, contact your observer coordinator first and immediately. Your coordinator will then contact the Marine Mammal Emergency Stranding (ES) coordinator. The ES coordinator will instruct the captain and crew on what procedures to follow, if possible. The observer is to assist the crew in any way possible to accomplish the ES coordinator's request. Any live marine mammal is to be released from entrapment as quickly and with as little gear associated with the animal as possible, with the exception of large whale mammals (right whale, sperm whale, or humpback whale). See the **INCIDENTALS** section of the manual for datasheets, identification guides, and instructions.

PHOTOS ARE A PRIORITY FOR ALL INCIDENTAL TAKE TO CONFIRM SPECIES IDENTIFICATION AND GEAR INVOLVEMENT.

VI. DATASHEETS AND DATA COLLECTION:**A. SGOP Data Forms****B. SBLOP Data Forms****C. Incidental Take Forms**

ALL INCIDENTAL TAKE (MAMMALS, TURTLES, SAWFISH, STURGEON AND SEA BIRDS) ARE RECORDED ON BOTH THE ANIMAL LOG AND ONE ADDITIONAL FORM DESCRIBED BELOW.

PHOTOS ARE A PRIORITY FOR ALL INCIDENTAL TAKE TO CONFIRM SPECIES IDENTIFICATION AND GEAR INVOLVEMENT.

1) Marine Mammal Incidental Take Log:

This form is only completed when a marine mammal is hooked or entangled in the gear (see Marine Mammal Incidental Take Instructions for more details)

2) Sea Turtle Life History Form:

This form is completed for each turtle involved in the gear. Complete as much information as possible given the equipment you have available and whether the captain brings the animal on board. If the animal appears to be comatose, a request should be made to bring it aboard, but the decision remains with the captain. Refer to SEFSC Sea Turtle Observer Manual for protocols, and apply them to your specific situation. All observers will receive turtle training and carry required permits in the field. At a minimum, turtles are to be photographed to verify identification and gear involvement (e.g. how hooked and/or how entangled).

8) Protected Resources Form:

This form is completed for each sawfish, sturgeon or sea bird involved in the gear. Complete as much information as possible given the equipment you have available and whether the captain brings the animal on board. At a minimum, sawfish, sturgeon and sea birds are to be photographed to verify identification and gear involvement (e.g. how hooked and/or how entangled).

VII. SAFETY:

Observers will carry a PFD and an immersion suit with attached signals (strobe, whistle, signal mirror and pEPIRB) during each deployment.

In addition, observers are provided with an individual first aid kit, paraffin wax for zipper maintenance, and a Personal Marker Light (PML) to attach to their rain jacket or Personal Floatation Device (PFD).

Observers will complete a Pre-Trip Safety Check form with the owner/operator or designated crew member.

IT IS THE POLICY OF THIS PROGRAM THAT THE OBSERVER HAS THE RIGHT TO REFUSE ANY TRIP FOR DOCUMENTED SAFETY OR HEALTH CONCERNS.

Documentation for trip-refusal **must** include a Pre-Trip Safety Check, and a written statement by the observer.

Observers will obey safe working practices aboard the vessel and avoid actions that would expose themselves or the vessel crew to undue risk.

In an emergency situation at sea, the authority/responsibility remains with the captain. He should contact the Coast Guard and they will determine the course of action. However, in any shipboard emergency, the observer will contact the coordinator to report that you have an emergency and update your status.

In order to increase program risk awareness and provide better training to all observers we are asking observers to report all injuries as well as close calls to the coordinator during debriefing. This information will not be vessel based, rather summarized by hazard type and/or injury type.

If medical treatment is required observers must also report to his/her employer and an incident report form will need to be filled out. This should also be documented in a field diary entry. Include the date, time, and details on type of injury, contributing factors and treatment (e.g. slipped on back deck, hydraulic leak, bruised knee, applied ice day 1, no further treatment required).

VIII. COMMUNICATIONS.

Once an observer is deployed he/she will update their coordinator once each day by land-line until the boat leaves the dock. At sea, observers will make contact with their coordinator once a week by cell phone, satellite phone, or radio to report their work status and ships' position.

Communication **is necessary** for the following:

- 1) To provide a last known position for safety. This can be given in Lat/Lon or as a geographic location.
- 2) Report work status (see status codes)
- 3) Confirm collection and or sampling protocol
- 4) Alert the lab to an emergency or request assistance
- 5) Report work hours
- 6) Report a marine mammal incidental take

Please limit your use of vessel equipment and always conduct yourself professionally. Be aware that anybody can be listening to your transmissions. References to catch should **always** be relayed in species codes. During all cell phone and radio contacts, the lab will ask about your working status. Please use one of the following codes to report your work status:

Code 1 = I'm OK, Work OK

Code 2 = I may not be OK, Work not OK

Code 3 = I'm not OK, Work not OK

In **Code 1**, no immediate action will be taken by the lab. Specific problems, if any will be addressed during the debriefing.

Code 2 denotes a serious situation aboard the vessel. All events will need to be documented and enforcement may be included in the debriefing process.

Code 3 denotes that an observer has suffered an assault or otherwise feels that they may be in jeopardy. In this instance, steps will be taken to involve NOAA Enforcement and the United States Coast Guard. An evacuation will be arranged or the vessel will be asked to return to port. Communication will be maintained until the observer is off the vessel.

Upon landing, observers will contact the office by land-line, discuss post trip details and determine if an observer should remain on site for a debriefing. Observers are provided with contact names and numbers to assist with personal travel or shipping needs.

SBLOP COORDINATOR – Simon Gulak	Office: 850-234-6541 ext 236 Cell: 850-387-0701 Email: Simon.Gulak@noaa.gov
SGOP COORDINATOR – Alyssa Mathers	Office: 850-234-6541 ext 226 Cell: 850-890-3853; 850-933-2084 Email: Alyssa.Mathers@noaa.gov
ASST COORDINATOR – Michelle Passerotti	Office: 850-348-3176 Cell: 850-445-6636 Email: Michelle.Passerotti@noaa.gov
ASST COORDINATOR – Michael Enzenauer	Office: 850-234-6541 ext 260 Cell: 952-393-4612 Email: Michael.Enzenauer@noaa.gov
ADMINISTRATOR – John Carlson	Office: 850-234-6541 ext 221 Cell: 850-624-9031 Email: John.Carlson@noaa.gov

If Observer is projected to be offshore at the end of a pay period, please provide hour estimations to staff. If estimations are not given, staff will turn in estimations for you.

IX. Equipment Checklist:

The observer will be provided with all field equipment necessary to meet the needs of the project, including foul weather gear and boots. An equipment checklist will be signed by the observer upon checkout and then by the coordinator upon check in. The following additional personal items are suggested:

- Sunglasses
- Sunscreen
- Hat
- Personal toiletries
- Towel(s)
- Deck shoes (close-toed)
- Candy, books, iPod etc.
- Bedding (sleeping bag, pillow)
- Clothing appropriate for weather conditions
- Personal survival kit

Observer

OBSERVER	
KIT NUMBER	

SAFETY SUPPLIES**Check Out****Check In**

SURVIVAL SUIT	Number-	Number-
DUFFEL BAG	Number-	Number-
DYE MARKER		
EPIRB	Number-	Number-
PFD (HORSE COLLAR)	Number-	Number-
PFD (FANNY PACK) - optional	Number-	Number-
PFD REARMING KIT		
PML		
SIGNAL MIRROR		
STROBE		
WAX		
WHISTLE		

TURTLE/MAMMAL SUPPLIES**Check Out****Check In**

TURTLE BIOPSY KIT, including:	--	--
1. BAND TAGS (50)		
2. BAND APPLICATOR		
3. IODINE SWABS		
4. PUNCHES (10)		
5. PIT TAG SCANNER	Number-	Number-
6. PIT TAG APPLICATOR	Number-	Number-
7. PIT TAGS (10)		
8. SPRAY PAINT (fluorescent)		
9. SURVEYOR TAPE		
MAMMAL BIOPSY KIT, including:	--	--
1. LARGE ZIPLOCS (10)		
2. SMALL ZIPLOCS (5)		
3. SMALL SAMPLE ZIPLOCS (10)		
4. LARGE BODY BAG (1)		
5. M & L LATEX GLOVES (3 pr ea)		
6. WORK SLATE		
7. NMFS BLUE CAUDAL TAGS (5)	Numbers-	Numbers-
8. ZIPTIES (10)		
9. SHARPIES (2)		
10. PENCIL (1)		
11. TAPE MEASURE		
12. SAMPLE TAGS (10)		
13. DIGITAL THERMOMETER		

GENERAL SUPPLIES	Check Out	Check In
BOOK LIGHT		
BOOTS	Size-	Size-
CARBON MONOXIDE ALARM		
CLIPBOARD		
COUNTER (2)		
CDR (5)		
DIGITAL CAMERA/MEMORY CARD	Number-	Number-
DIGITAL CAMERA CASE	Number-	Number-
DIVE SLATE		
FIELD GUIDE TO FISHING SAFETY		
FIELD GUIDE TO FISHES		
FIELD GUIDE TO COASTAL FISHES		
FIELD GUIDE TO MARINE MAMMALS		
FIELD GUIDE TO SHARKS		
FIELD GUIDE TO BEACHED BIRDS		
FIELD LOG (2)		
FLASHLIGHT		
FOUL WEATHER GEAR - Jacket	Size-	Size-
FOUL WEATHER GEAR - Pants	Size-	Size-
GLOVES (Atlas brand, 2 pair)	Size-	Size-
GPS HANDHELD	Number-	Number-
KNIFE (pocket)		
KNIFE (serrated)		
KNIFE (slime)		
KNIFE SHARPENER		
METER STICK (folded)		
PENCIL LEAD PACK		
PENCILS - Mechanical (3)		
PENCILS - Grease (2)		
RECHARGABLE BATTERIES (AA) (4)		
RECHARGABLE BATTERIES (AAA) (4)		
RECHARGABLE BATTERY CHARGER		
LITHIUM BATTERIES-STROBE (AA) (2)		
RUBBER BANDS		
SAFETY GLASSES		
SCOTCH TAPE		
SCREW DRIVER		
SHARPIE-FINE (2)		
SHARPIE-ULTRA FINE (2)		
SLEEPING MAT		
SURVEYOR MEASURE TAPE		
TAPE MEASURE (2)		
THERMOMETER		
VIALS for fin clips (20)		
VENTING NEEDLE		

ZIP-TIES		
ZIPLOCS (gallon, 2 gallon, quart, XL)		

FIRST AID KIT	Check Out	Check In
FIRST AID KIT BAG	Number-	Number-
ALCOHOL WIPES		
ASPIRIN		
BABY WIPES		
BANDAGES		
BENADRYL		
CPR FACE SHIELD		
DRAMAMINE		
EARPLUGS		
FINGERNAIL BRUSH		
GAUZE		
HIBISTAT WIPES		
HYDROCORTIZONE CREAM		
IODINE WIPES		
INSTANT COLD PACK		
MEDICAL TAPE		
PEPTO BISMAL		
STING RELIEF		
SUNSCREEN WIPES		
TRIPLE ANTIBIOTIC OINTMENT		
TYLENOL		
WARMING BLANKET		
WATER-FREE HAND SANITIZER		
HIBICLENS		
SANI-HANDS WIPES		
STAPHASEPTIC		
GERM-X WIPES		

Upon signing the gear check off form, the gear issued to you is your responsibility. You will be responsible for keeping this gear in a safe place and will be responsible for any lost items. Also any gear that is damaged by neglect or improper usage will be your responsibility. Any lost or damaged gear needs to be reported to the lab immediately. The staff will determine on a case-by-case basis whether the item was damaged due to negligence or misuse. Some tips on gear maintenance are as follows,

1. Attempt to keep all items in a dry place and if they do get wet make sure to dry everything thoroughly. Periodically inspect all containers for moisture.
2. Use extreme care with all electronic devices (satellite phone, camera, etc.) while deployed offshore, these items do not tolerate abuse.
3. Use common sense when around the docks and keep an eye on gear at all times.
4. Always double check a vessel after a trip before departing for any items left onboard.
5. After a deployment all gear should be inspected and cleaned immediately upon return after the trip.
6. When employment ends it is your responsibility to return all items to the lab in a clean and timely manner. If items are not clean when returned, you will be charged a cleaning fee for those items.

Your signature below signifies that you have read and understand these standards and policies. Failure to comply with these policies could result in monetary penalties.

Check Out:

Observer: _____ Date: _____

Coordinator: _____ Date: _____

Check In:

Observer: _____ Date: _____

Coordinator: _____ Date: _____

**SEFOP-Panama City
Quarterly Observer Gear Inspection**

Observer Name: _____

Kit #: _____

Survival Suit #

Dates:

Overall inspection (seams,
tape, air bladder/hose, re-
packed with alternate folds)

Zipper waxed

Strobe/batteries checked

PML Expiration checked

Mirror/whistle checked

First Aid Kit:

Dates:

Drugs in date

Other items fully stocked
and clean/dry

Hibiclens/Hibistat/Purell
fully stocked

EPIRB #

Dates:

Tested?

Decal/battery
expiration
checked

PFD #

Dates:

Overall
inspection

Pit Tag Scanner #

Dates:

Batteries/
function
checked

NOTES/ITEMS NEEDING ATTENTION:

Observer Signature: _____

Date: _____

Received by: _____ Date: _____

INSTRUCTIONS FOR SATELLITE PHONE USE

Satellite phones will be issued to observers on trips longer than 5 days or in special circumstances.

Enclosed in case:

Iridium 9555/9575 Satellite Phone
Wall Charger and car charger
Magnetic Antenna
Headphones

Instructions:

How to turn on phone:

- 1) Press and hold power button on top right corner.
- 2) Fully extend the antenna and point towards the sky.
- 3) Wait for cell display to say "Iridium" and check the bars for signal.

How to make a call to land:

- 1) Dial 00, then 1, then the area code, and then the number
- 2) Press "OK"

Lab number = 00-1-850-234-6541

Rules:

- 1) Use satellite phones sparingly, but call in on Friday with no exceptions.
- 2) Turn on and check messages once a day. Otherwise, keep phone off.
- 3) Personal usage within reason is allowed (5 mins per 5 seadays). We will monitor minutes.
- 4) **DO NOT** lose, damage or drop in saltwater. The phones cost \$2500 and you will be liable for replacement.
- 5) Abuse of the rules stated will result in loss of satellite phone privileges.

I. QUICK REFERENCE: ATLANTIC SHARK REGULATIONS

AUTHORIZED SPECIES
<p><u>Large Coastal Sharks (LCS)</u>: Blacktip, bull, lemon, nurse, spinner, silky, hammerhead (great, scalloped, and smooth)*, tiger sharks</p> <p><u>Small Coastal Sharks (SCS)</u>: Atlantic sharpnose, blacknose, bonnethead, finetooth</p> <p><u>Pelagic Sharks</u>: Blue, common thresher, oceanic whitetip*, shortfin mako, porbeagle</p> <p>* These sharks may not be retained, transshipped, landed, stored, or sold by vessels with PLL gear onboard. Charter/headboat vessels cannot simultaneously possess hammerhead (great, smooth, or scalloped) or oceanic whitetip sharks and tunas, swordfish, and/or billfish.</p>
PROHIBITED SPECIES
<p>Atlantic angel, basking, bigeye sand tiger, bigeye sixgill, bigeye thresher, bignose, Caribbean reef, Caribbean sharpnose, dusky, Galapagos, longfin mako, narrowtooth, night, sandbar**, sand tiger, sevengill, sixgill, smalltail, whale, and white sharks.</p> <p>** Only vessels selected to participate in the shark research fishery are allowed to harvest sandbar sharks, subject to the retention limits set forth by NMFS, and only when a NMFS-approved observer is onboard.</p>
PERMITS
<p>Commercial fishermen must possess a valid Atlantic shark Directed or Incidental permit for the vessel they are using to harvest Atlantic sharks. Under the limited access program, NMFS is no longer issuing new commercial shark permits. Prior to renewing or obtaining a shark limited access permit, fishermen must become certified at a Protected Species Safe Handling, Release and Identification Workshop if fishing with longline or gillnet gear (see Section XIII). Contact the Southeast Regional Office at (727) 824-5326 for information on commercial shark permits.</p>
RETENTION LIMITS
<p><u>Directed Permit</u>: 33 non-sandbar LCS per vessel per trip. No retention limits for pelagic or SCS.</p> <p><u>Incidental Permit</u>: 3 non-sandbar LCS per vessel per trip. 16 pelagic or SCS (combined) per vessel per trip.</p>
AUTHORIZED GEARS
<ul style="list-style-type: none"> • Longline**: Bottom or pelagic*** • Handgear: Rod and reel, handline, and bandit gear • Gillnet: A gillnet cannot be longer than 2.5 km, must be attached to the vessel at one end while fishing, and is subject to additional restrictions in place in the Southeast Restricted Areas (North and South) between November 15 and April 15 every year per the Atlantic Large Whale Take Reduction Plan (ALWTRP) regulations at 50 CFR 229.32 <p>Gillnet checks must be conducted every 1-2 hours.</p> <p>** All commercial longline vessels must have handling and release gear and corrodible hooks on board. Circle hooks are required for pelagic longline gear. Bait restrictions also apply.</p> <p>*** Vessels with pelagic longline gear onboard are not authorized to possess, retain, transship, store, or land hammerhead sharks (great, smooth, and scalloped) or oceanic whitetip sharks.</p>
MINIMUM SIZES
<p>At this time there is no commercial minimum size for Atlantic sharks.</p>
LANDING RESTRICTIONS
<p>All sharks must have their fins naturally attached through offloading. Fins may be cut as long as they remain naturally attached to the carcass with at least a small flap of uncut skin. Sharks may be eviscerated and the heads may be removed, but they cannot be filleted or cut into pieces at sea</p>
<p><u>Additional remarks</u>:</p> <p>There are two regions [Gulf of Mexico (GOM) (which includes the U.S. Caribbean) and Atlantic] for non-sandbar LCS; there is one region for SCS and pelagic sharks.</p>

See 50 CFR part 635 for the current Atlantic HMS regulations and 50 CFR part 300 subpart M for the ITP regulations. Regulations may change, and if disparities with this guide exist, the regulations prevail.

The commercial fishing season is approximately January 1 through December 31. Individual shark seasons will close when 80% of quota is reached, with 5 days' notice.

Vessel Monitoring System (VMS) requirements apply for certain bottom longline and shark gillnet vessels.

There are several closed areas. See the appropriate section of this guide, the HMS webpage, or 50 CFR part 635 for more details and locations of area closures.

VIII. COMMERCIAL SHARK FISHING

AUTHORIZED SHARK SPECIES*

Based on a combination of ecology and fishery dynamics, the authorized shark species in the Atlantic HMS management unit have been divided into the following three species groups:

<u>Large Coastal Sharks</u>						
Blacktip	Bull	Lemon	Nurse	Spinner	Silky	Tiger
Great hammerhead*		Smooth hammerhead*			Scalloped hammerhead*	
<u>Small Coastal Sharks</u>						
Atlantic sharpnose		Blacknose	Bonnethead		Finetooth	
<u>Pelagic Sharks</u>						
Blue	Common thresher		Oceanic whitetip*		Porbeagle	Shortfin mako

* Hammerhead sharks (great, smooth, and scalloped) and oceanic whitetip sharks cannot be retained, transshipped, landed, stored, or sold by vessels with PLL gear onboard

COMMERCIALLY PROHIBITED SHARK SPECIES

The following sharks cannot be possessed or retained in any form in the commercial shark fishery. If one of these species is caught, it must be released immediately with minimal injury, without removing it from the water and in a manner that maximizes its chances of survival.

Atlantic angel	Basking	Sand tiger
Bigeye sand tiger	Bigeye sixgill	Sixgill
Bigeye thresher	Bignose	Whale
Caribbean reef	Caribbean sharpnose	Sevengill
Dusky	Galapagos	Smalltail
Longfin mako	Narrowtooth	White
Night	Sandbar*	

* Only vessels selected to participate in the shark research fishery are authorized to harvest sandbar sharks and only when a NMFS-approved observer is onboard. Possession of sandbar sharks and other shark species isare subject to the modified retention limits for this research fishery.

PERMITS

Any fishermen who fishes for, retains, possesses, sells, or intends to sell, Atlantic sharks needs a Federal Atlantic **Directed** or **Incidental** shark limited access permit. Generally, directed shark permits allow fishermen to target sharks while incidental permits allow fishermen who normally fish for other species to land a limited number of sharks. These permits are administered under a limited access program and NMFS is no longer issuing new shark permits. To obtain a permit, fishermen must obtain a permit via transfer from an existing permit holder who is leaving the fishery, within the upgrading restrictions. For information on permit renewals and transfers please contact the Southeast Region Permit Office at (727) 824-5326.

A **Directed Shark Permit** allows fishermen to retain 33 non-sandbar large coastal sharks (LCS) per vessel per trip. There is no directed numeric retention limit for pelagic sharks or small coastal sharks, subject to quota limitations No prohibited species may be retained.

An **Incidental Permit** allows fishermen to retain up to 3 non-sandbar LCS per vessel per trip. Fishermen may also keep up to a total of 16 pelagic or small coastal sharks (all species combined) per vessel per trip. No prohibited species may be retained.

See 50 CFR part 635 for the current Atlantic HMS regulations and 50 CFR part 300 subpart M for the ITP regulations. Regulations may change, and if disparities with this guide exist, the regulations prevail.

Fishermen who use longline or gillnet gear must attend a Protected Species Safe Handling, Release, and Identification Workshop and obtain a certificate prior to obtaining a commercial shark limited access permit (LAP). Both the owner and operator of the vessel permitted for this fishery must have a workshop certificate on board the vessel. NMFS also encourages commercial fishermen to attend an Atlantic Shark Identification Workshop to enhance identification of shark species (see Section XIII).

SHARK RESEARCH FISHERY

Each year, NMFS will accept applications to participate in a shark research fishery. From the applications received, NMFS will randomly select a small number of commercial vessels based upon set criteria to participate in the shark research fishery. Selected vessels are able to harvest sandbar sharks when a NMFS-approved observer is onboard. Possession of sharks is subject to the modified retention limits for this research fishery. Commercial shark fishermen who are interested in participating in the shark research fishery need to submit a completed Shark Research Fishery Permit Application in order to be considered. For copies of the Shark Research Fishery Application during the application period announced each year, please visit <http://www.nmfs.noaa.gov/sfa/hms/> or call the HMS Management Division at (301) 427-8503

AUTHORIZED GEAR TYPES

Authorized gear types include: pelagic or bottom longline, gillnet, rod and reel, handline, or bandit gear. Handlines must remain attached to, or in contact with, the vessel at all times. See Section VI for additional restrictions on pelagic and bottom longline gear including closed areas, hook specifications, and protected species interactions.

MINIMUM SIZE

There is no commercial minimum size limit for large coastal sharks, pelagic sharks or small coastal sharks.

FISHING SEASON(S) AND CLOSURE DATE(S)

Seasons for all shark species will generally open on or around January 1 every year contingent upon available quota. The season will not open until NMFS publishes the opening date and available quota in the Federal Register. Once NMFS estimates that 80 percent of an individual species/complex's quota has been caught, the season will be closed no fewer than five days after publication of filing a closure notice in with the Federal Register. When either the blacknose shark or non-blacknose SCS quota has reached 80 percent, the entire SCS fishery will close no fewer than five days after publication of filing a closure notice in the Federal Register. NMFS will send out a notice to the HMS listserve, and post the announcement on the website no fewer than five days ahead of the closure effective date. . Call the HMS Management Division at (301) 427-8503 or visit <http://www.nmfs.noaa.gov/sfa/hms/> for information regarding the current status of shark fishery seasons.

FISHING REGION(S)

The non-sandbar large coastal shark (LCS) commercial quotas are split between two regions, the Gulf of Mexico and the Atlantic. The **boundary** between the Gulf of Mexico region and the Atlantic region is defined as a line beginning on the east coast of Florida at the mainland at 25°20.4' N. lat, proceeding due east.

Gulf of Mexico: Any water and land to the south and west of 25°20.4' N. lat. This includes the U.S. Caribbean.

Atlantic: Any water and land to the north and east of 25°20.4' N. lat.

See 50 CFR part 635 for the current Atlantic HMS regulations and 50 CFR part 300 subpart M for the ITP regulations. Regulations may change, and if disparities with this guide exist, the regulations prevail.

There is one region for sandbar shark, small coastal shark (SCS), and pelagic shark commercial quotas. When a region is closed for a particular species group, fishermen in that region cannot fish for species in that group and dealers in that region cannot buy species in that group from federally-Federally permitted fishermen.

TIME/AREA CLOSURES

For information on existing time and area closures, refer to Sections V and VI of this Compliance Guide, or call the HMS Management Division at (301) 427-8503.

ANNUAL QUOTAS

Please call the HMS Management Division at (301) 427-8503 for details on shark quotas. Quotas may be adjusted in the future to account for yearly over- and/or underharvests. Any quota adjustments will be posted on the HMS website under “Breaking News,” and will also be published in the Federal Register and sent to the *Atlantic HMS News* listserve.

VESSEL UPGRADING RESTRICTIONS

In general, an owner may upgrade a vessel with a directed limited access permit, or transfer the directed limited access permit to another vessel, only if the upgrade or transfer does not result in an increase in horsepower of more than 20 percent or an increase of more than 10 percent in length overall, gross registered tonnage, or net tonnage from the original qualifying vessel’s specifications. However, some limited access permits qualify for less restrictive vessel upgrading limitations as described in the next paragraph.

Vessel upgrading restrictions may differ, depending upon whether a vessel was concurrently issued, or was eligible to renew, each of the following three limited access permits (LAPs) on August 6, 2007: 1) incidental or directed swordfish permit; 2) incidental or directed shark permit; and 3) an Atlantic tunas Longline category permit. Vessels that were concurrently issued, or eligible to renew, these three permits on August 6, 2007, are eligible for vessel upgrades, or permit transfers to other vessels, only if the upgrade or permit transfer does not result in an increase of more than 35 percent in length overall (LOA), gross registered tonnage (GRT), or net tonnage (NT), as measured relative to the original qualifying vessel’s specifications. Horsepower (HP) is not restricted for these vessels.

Incidental catch LAPs are not subject to vessel upgrading restrictions.

For more information on upgrading restrictions, call the Southeast Regional Permit Office at (727) 824-5326.

SELLING SHARKS

Atlantic sharks and shark fins from Federally permitted vessels may be sold **only** to federally permitted dealers. Dealers may obtain an Atlantic shark dealer permit by contacting the Southeast Regional Permit Office at (727) 824-5326.

VMS REQUIREMENTS

Atlantic shark **bottom longline** vessels with directed shark permits located between 33° N and 36° 30' N must operate a VMS unit from January through July. Atlantic shark **gillnet** vessels with a directed shark permit must operate a VMS unit from November 15 - April 15 consistent with the requirement of the Atlantic Large Whale Take Reduction Plan (ALWTRP) regardless of

See 50 CFR part 635 for the current Atlantic HMS regulations and 50 CFR part 300 subpart M for the ITP regulations. Regulations may change, and if disparities with this guide exist, the regulations prevail.

fishing location. Please contact the HMS Management Division at (301) 427-8503 or see Section XIV for VMS contact information.

Effective January 1, 2012, any new or replacement Enhanced Mobile Transmitting (E-MTU) VMS units must be installed by a qualified marine electrician. Effective March 1, 2012, a declaration system, where vessel operators must declare their target species and gear type(s) on board two hours prior to departing from port and provide NMFS advanced notice of landing three hours before a trip has been completed.

REPORTING REQUIREMENTS

Logbooks

Selected fisherman with a commercial shark permit must report fishing activities in an approved logbook within 48 hours of completing that day's fishing activities, or before offloading, whichever is sooner. Logbooks must be submitted within seven days of offloading. Logbook reports must include weighout slips that have all fin and carcass weights recorded and that shows the dealer to whom the fish were transferred, the date they were transferred, and the carcass weight of each fish for which individual weights are normally recorded. For fish that are not individually weighed, a weighout slip must record total weights by species and market category. A weighout slip for sharks prior to, or as part of, a commercial transaction involving shark carcasses or fins must record the weights of carcasses and any detached fins. All fins must be weighed in conjunction with the weighing of the carcasses at the vessel's first point of landing. NMFS requires the submission of a "No Fishing" reporting form if no trips occurred during the preceding month.

NMFS may also send a letter requesting that fishermen complete the cost-earnings section of the logbook. Fishermen must then complete and submit that section of the logbook within 30 days of offloading. This section must be completed in addition to the other logbook reporting requirements. The "annual expenditures" report form must be submitted by the date specified on the form. The economic data section must be completed in addition to the other logbook requirements.

NMFS Observer Program

If NMFS sends a letter to fishermen notifying them that they have been selected to carry an observer aboard their vessel, the fishermen must inform NMFS prior to each trip taken during the selection period when they will be taking a trip. If that trip is selected, a NMFS observer **must** be onboard in order for that vessel to go fishing. In order to carry a NMFS observer, the vessel must comply with certain regulatory requirements regarding observer health and safety; however, failure to comply with those requirements does not relieve a vessel of the requirement to carry an observer if selected.

LANDING RESTRICTIONS

All sharks must have their fins naturally attached through offloading. Fins may be cut as long as they remain naturally attached to the carcass with at least a small flap of uncut skin. Sharks may be eviscerated and have the heads removed at sea. Sharks harvested from the management unit cannot be filleted or cut into pieces at sea. Once landed and offloaded, sharks that have been halved, quartered, filleted, cut up, or reduced in any manner may not be brought back on board a vessel that has been issued or should have been issued a federal Atlantic commercial shark permit.

See 50 CFR part 635 for the current Atlantic HMS regulations and 50 CFR part 300 subpart M for the ITP regulations. Regulations may change, and if disparities with this guide exist, the regulations prevail.

The Shark Finning Prohibition Act (SFPA) of 2000 established a rebuttable presumption that any shark fins possessed on board a U.S. fishing vessel, or landed from any fishing vessel, were taken, held, or landed in violation of the law if the total weight of the shark fins exceeds 5 percent of the total weight of shark carcasses landed from or found on board the vessel. This statutory requirement was implemented by final rule in 2002. See Regulation Implementing the SFPA of 2000 (67 FR 6194, February 11, 2002). All dealer reports must be species specific and specify the total shark fin weight separately from the weight of the shark carcasses. The SFPA provides that if the total weight of the fins exceeds five percent of the total weight of the landed shark carcasses, this would trigger the rebuttable presumption in the SFPA. Dealer forms for Atlantic shark dealers were modified to include a check box that indicates whether fins were naturally attached to the carcass at landing and through offloading. On January 2, 2011, President Obama signed the Shark Conservation Act. NMFS is in the process of implementing the requirements of this Act.

PUBLIC DISPLAY OF SHARKS

Please see the HMS website <http://www.nmfs.noaa.gov/sfa/hms/> for more information on Exempted Fishing, Scientific Research, and Display Permits. Dusky sharks are not authorized to be collected for public display.

IX. COMMERCIAL TUNA FISHING

PERMITS

A vessel permit is required to fish for, retain, possess, or sell Atlantic bluefin tuna, or ‘BAYS’ tunas (bigeye, albacore, yellowfin, and skipjack) in federal or state waters of the Atlantic, Gulf of Mexico, or Caribbean Sea. The commercial Atlantic Tunas vessel permit categories include: General, Harpoon, Purse Seine, Longline, and Trap. The HMS Charter/Headboat permit category permit holders may also participate in commercial tuna fisheries. Only one category may be assigned to a vessel per year.*

* Since only one Atlantic tunas permit can be issued to a vessel, fishermen have to choose between a commercial Atlantic tunas permit or the HMS Charter/Headboat permit. An Atlantic tunas vessel permit issued in the General category may be used to participate in registered HMS tournaments. Please refer to Section XI for more information regarding tournament fishing for Atlantic tunas General category permit holders. Vessels that hold an Atlantic tunas General category permit and are participating in a registered HMS Tournament may fish for all HMS.

Please note that Atlantic tunas Longline and Purse Seine category permits are limited access permits and NMFS is no longer issuing new permits in these categories. To obtain a Longline permit, fishermen must obtain a permit from a fisherman leaving the fishery. Atlantic tunas Longline permits are transferred between vessels and are subject to upgrading restrictions.

For more information on how to apply for a permit, or for permit renewal and transfers, please visit www.hmspermits.gov or contact the Atlantic Tunas Information line at (888) 872-8862 or (978) 281-9260. A customer service representative may be reached by dialing “0” from the main menu.

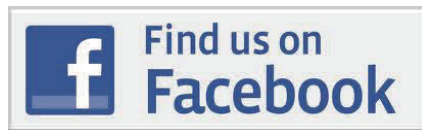
REQUIREMENTS BY FISHING PERMIT CATEGORY

Atlantic Tunas General category permit holders may retain bluefin tuna subject to the retention limits set forth by NMFS. Vessel operators should check the web site at www.hmspermits.gov or telephone information lines at (888) 872-8862 to verify the bluefin tuna retention limit on any given day. There is no daily retention limit on BAYS tunas; however, yellowfin and bigeye tuna must be greater than 27” curved fork length.

See 50 CFR part 635 for the current Atlantic HMS regulations and 50 CFR part 300 subpart M for the ITP regulations. Regulations may change, and if disparities with this guide exist, the regulations prevail.

Commercial Fishing Regulations for Gulf of Mexico Federal Waters

Updated 12/18/12



This publication was prepared for general informational purposes and has no legal force or effect. Fishing regulations are subject to change. A separate summary of recreational fishing regulations is available from the Gulf Council.

A publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NAO5NMF4410011



**For Species Managed by the Gulf of Mexico
Fishery Management Council**



Gulf of Mexico Fishery Management Council

2203 N. Lois Avenue
Suite 1100
Tampa, FL 33607

Tel: 813-348-1630
Fax: 813-348-1711
Email: gulfcouncil@gulfcouncil.org
Web site: www.gulfcouncil.org



Gulf of Mexico Fishery Management Council

2203 N. Lois Avenue
Suite 1100
Tampa, FL 33607

Tel: 813-348-1630
Fax: 813-348-1711
Email: gulfcouncil@gulfcouncil.org
Web site: www.gulfcouncil.org

About the Gulf of Mexico Fishery Management Council

The Gulf of Mexico Fishery Management Council is one of eight regional Fishery Management Councils established by the Fishery Conservation and Management Act of 1976. The Council prepares fishery management plans which are designed to manage fishery resources within the 200-mile limit of the Gulf of Mexico.

The Council consists of 17 voting members: the Southeast Regional Administrator of NMFS (or his designee), the directors of the five Gulf state marine resource management agencies (or their designees), and 11 members who are nominated by the state governors and appointed by the Secretary of Commerce. Appointments are three-year terms with a maximum of three consecutive terms. In addition, there are four nonvoting members representing the U.S. Coast Guard, U.S. Fish and Wildlife Service, Department of State, and the Gulf States Marine Fisheries Commission.

The Council meets five times a year at various locations around the Gulf coast. When reviewing potential rule changes, the Council draws upon the services of knowledgeable people from other state and federal agencies, universities, and the public, who serve on panels and committees.

Public hearings are held throughout the Gulf coast before the Council takes final action on proposed rule changes. Public testimony is also heard during the meeting at which final action is scheduled. Proposed rule changes are then submitted to NOAA Fisheries Service for further review and approval before implementation.

State Agencies:

Alabama Department of Conservation and Marine Resources	251-861-2882
Information or to report state fishing violations	251-968-7576
24-hour voice mail to report state fishing violations	251-476-1256
Florida Fish and Wildlife Conservation Regulations Information	850-487-0544
Commission information	850-488-4676
To report state fishing violations	850-488-9924
	888-404-3922
Cellular phone	*FWC
Louisiana Department of Wildlife and Fisheries information	225-765-2800
To report state fishing violations	800-442-2511
Mississippi Department of Marine Resources	
Information and to report state fishing violations	228-374-5000
Texas Parks and Wildlife Department	
Information	800-792-1112
To report state fishing violations	512-389-4848
	281-842-8100
	800-792-game

Errata and Update Sheets

Supplemental "errata and update sheets" will be published periodically to reflect changes in fishing regulations implemented since this pamphlet was published. Contact the Gulf Council to obtain the most recent supplement.

NOTE: The Official Electronic Code of Federal Regulations for 50 CFR 622—for Fisheries of the Caribbean, Gulf of Mexico and South Atlantic is available online. [Please visit www.gpoaccess.gov/cfr/index.html](http://www.gpoaccess.gov/cfr/index.html).

Important Phone Numbers

NMFS Operations Branch 727-824-5305
 NMFS Permits and Regulations Branch 877-376-4877
 (see below for tuna permit applications)

To apply for permits online: www.nmfspermits.com

NMFS nationwide federal fishing violations hotline 800-853-1964
 NMFS 24-hour tuna information line 888-872-8862
 (also for tuna permit applications) 978-281-9260
 NMFS Highly Migratory Species Division 301-713-2347
 NMFS Swordfish/Billfish Recreational Reporting 800-894-5528

Flower Garden Banks National Marine Sanctuary 409-621-5151

Florida Keys National Marine Sanctuary 305-809-4700

South Atlantic Fishery Management Council 843-571-4366

Gulf States Marine Fisheries Commission 228-875-5912

U.S. Coast Guard, 7th District 305-415-6781
 (Florida east of St. Marks)

U.S. Coast Guard, 8th District 504-671-2245
 (St. Marks, Florida to Texas)

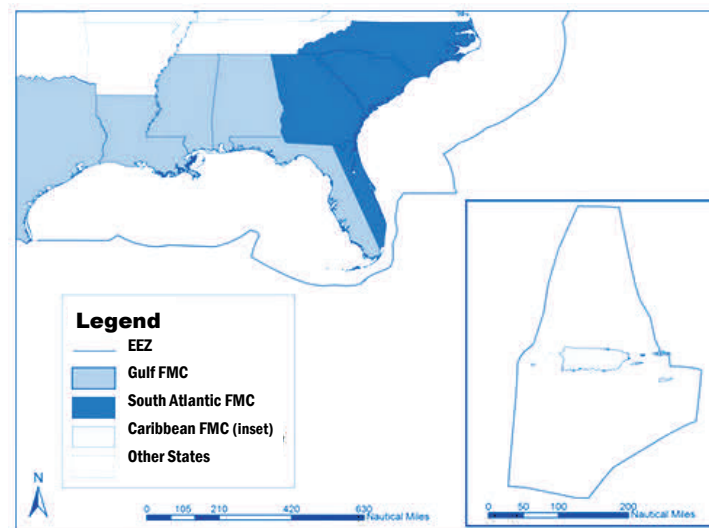
Regional NMFS Office for Law Enforcement 727-824-5344

NMFS Enforcement Field Offices:

St. Petersburg, FL 727-893-3616
 Marathon, FL 305-743-3110
 Niceville, FL 850-729-8628
 Slidell, LA 985-643-6232
 Galveston, TX 409-770-0812
 Harlingen, TX 956-423-3450

Table of Contents

Commercial Regulations for Coastal Migratory Pelagics	4
Reef Fish	5
Corals/Shellfish/Other	7
Commercial Permit Requirements	8
Other Requirements	9
New Regulations.....	15
Marine Sanctuaries and Area Closures	16
Important Numbers	22



Commercial Fishing Regulations—CMPs

Species	Minimum Size Limit	Trip Limit	Quotas/Closed Seasons
Coastal Migratory Pelagics			
Cobia (ling)	33" fork length	Daily bag and possession limit of 2 per person	NOTE: Drift gill nets are prohibited
King Mackerel	Minimum 24" fork length Maximum of 5% by weight may be undersized	Eastern Zone: FL east coast subzone 11/1 to 3/31—50 fish per trip until quota filled. If 75% of quota is not harvested by 2/1, trip limit increases to 75 fish. 4/1 to 10/31—South Atlantic regulations apply, refer to South Atlantic Council regulation pamphlet. FL west coast subzone: Gillnets 6:00 a.m. day after the Martin Luther King Jr. Federal holiday until gear quota reached—25,000 lbs/trip whole weight FL west coast subzone: Hook-and-line 7/1 until 75% gear quota—1,250 lbs/trip then 500 lbs/trip whole weight until gear quota filled Gill net 25,000 lbs/trip whole weight Western Zone: 7/1 - 3,000 lbs/trip until quota filled	Quota FL-east subzone 1,102,896 lbs whole weight Northern Hook- and-line 178,848 lbs whole weight Southern Gillnets 551,448 lbs whole weight Southern Hook-and-line 551,448 lbs whole weight Western Zone: 1,071,360 lbs whole weight

Gulf of Mexico Federal Waters

The Gulf of Mexico Fishery Management Council manages federal waters of Gulf of Mexico Exclusive Economic Zone. Federal waters begin three to nine nautical miles offshore to 200 mile limit of the Gulf of Mexico. From Texas and Florida federal waters begin nine nautical miles out, and from Mississippi, Louisiana and Alabama, federal waters begin three nautical miles out.

Title 50: Wildlife and Fisheries

PART 600—MAGNUSON-STEVENS ACT PROVISIONS
Subpart B—Regional Fishery Management Councils

§ 600.105 Intercouncil boundaries.

- (c) South Atlantic and Gulf of Mexico Councils. The boundary coincides with the line of demarcation between the Atlantic Ocean and the Gulf of Mexico, which begins at the intersection of the outer boundary of the EEZ, as specified in the Magnuson-Stevens Act, and 83°00' W. long., proceeds northward along that meridian to 24°35' N. lat., (near the Dry Tortugas Islands), thence eastward along that parallel, through Rebecca Shoal and the Quicksand Shoal, to the Marquesas Keys, and then through the Florida Keys to the mainland at the eastern end of Florida Bay, the line so running that the narrow waters within the Dry Tortugas Islands, the Marquesas Keys and the Florida Keys, and between the Florida Keys and the mainland, are within the Gulf of Mexico.

State Authority in Federal Waters

A state may regulate vessels that are registered in that state and fishing in federal waters for species for which there are no federal fishery management plans or applicable federal regulations, or for which the appropriate fishery management plan has delegated management of the state and the state rules are consistent with federal regulations.

NOTE: Federally permitted for-hire reef fish vessels must comply with the more restrictive of federal or state reef fish regulations when fishing for reef fish in state waters.

Marine Sanctuaries and Area Closures *continued*

The following locations off the west-central coast of Florida are closed to all fishing from November 1 to April 30. Surface trolling for species other than reef fish is allowed May 1 to October 31.

Madison/Swanson Marine Reserve:		
	Latitude	Longitude
NW	29° 17' N.	85° 50' W.
NE	29° 17' N.	85° 38' W.
SW	29° 06' N.	85° 50' W.
SE	29° 06' N.	85° 38' W.

Steamboat Lumps Marine Reserve:		
	Latitude	Longitude
NW	28° 14' N.	84° 48' W.
NE	28° 14' N.	84° 37' W.
SW	28° 03' N.	84° 48' W.
SE	28° 03' N.	84° 37' W.

Habitat Areas of Particular Concern

Bottom anchoring, trawling gear, bottom longlines, buoy gear and traps/pots are prohibited in the Habitat Areas of Particular Concern (HAPCs) listed below.

Pulley Ridge		
Point	North Latitude	West Longitude
A	24° 58' 18" N	83° 38' 33" W
B	24° 58' 18" N	83° 37' 00" W
C	24° 41' 11" N	83° 37' 00" W
D	24° 40' 00" N	83° 41' 22" W
E	24° 43' 55" N	83° 47' 15" W
A	24° 58' 18" N	83° 38' 33" W
McGrail Bank		
Point	North Latitude	West Longitude
A	27° 59' 06.0" N	92° 37' 19.2" W
B	27° 59' 06.0" N	92° 32' 17.4" W
C	27° 55' 55.5" N	92° 32' 17.4" W
D	27° 55' 55.5" N	92° 37' 19.2" W
A	27° 59' 06.0" N	92° 37' 19.2" W

Use of gillnets permitted only in the southern Florida west coast subzone. The gillnet fishery for Gulf group king mackerel in or from the Gulf EEZ is closed each fishing year from July 1 until 6:00 a.m. on the day after the Martin Luther King Jr. Federal holiday. The gillnet fishery also is closed during all subsequent weekends and observed Federal holidays, except for the first weekend following the Martin Luther King Jr. holiday, which will remain open to the gillnet fishery provided a notification of closure of that fishery has not been filed. Weekend closures are effective from 6:00 a.m. Saturday to 6:00 a.m. Monday. Holiday closures are effective from 6:00 a.m. on the observed Federal holiday to 6:00 a.m. the following day.

Species	Minimum Size Limit	Trip Limit	Quotas/Closed Seasons
Spanish Mackerel	12" fork length	None	Quota: 5.187 MP Gulf group. Season from 4/1 through 3/31.

Commercial Fishing Regulations—Reef Fish

Reef Fish			
Red Snapper	13" total length	Red snapper is managed under an IFQ program. Anyone commercially fishing for red snapper must possess IFQ allocation and follow established protocols.	4.121 MP
Vermilion Lane	10" total length	None	NOTE: The Gulf Council is considering a Catch Share program for the entire commercial reef fish fishery and has set a control date of December 31, 2008 for all reef fish.
Gray (Mangrove)	8" total length	None	
Mutton	12" total length	None	
Yellowtail	16" total length	None	
Mahogany	12" total length	None	
Schoolmaster	12" total length	None	
Dog	12" total length	None	
Cubera	12" total length	None	
Blackfin	None	None	
Queen	None	None	
Silk	None	None	
Wenchman	None	None	
Tilefish	None	Tilefish is now managed under an IFQ program. Anyone commercially fishing for tilefish must possess IFQ allocation and follow established protocols.	Overall tilefish Quota: 0.44 MP gutted weight

Reef Fish continued

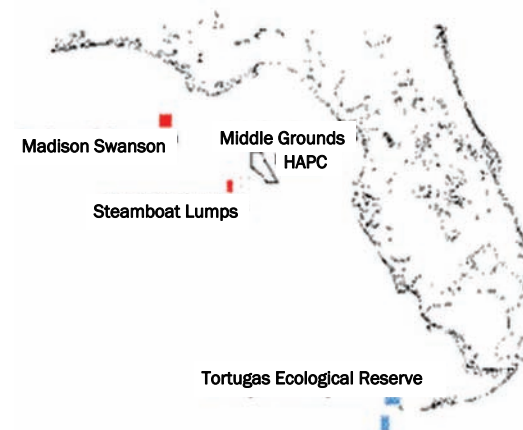
Species	Size Limit	Trip Limit	Quotas/Closed Seasons
Deep-Water Groupers			
Snowy Yellowedge Warsaw** Speckled Hind**	None None None None	Grouper are managed under an IFQ program. Anyone commercially fishing for grouper or tilefish must possess IFQ allocation and follow established protocols.	DWG quota 1.127 MP gutted weight **For purposes of the IFQ, speckled hind and Warsaw grouper are also included as SWG.
Shallow-Water Groupers			
Gag Red Black Yellowfin Scamp* Yellowmouth	22" total length 18" total length 24" total length 20" total length 16" total length None	*Scamp is considered a SWG species. For purposes of the IFQ, once an IFQ account holder's other SWG allocation has been landed and sold, or transferred, or if the IFQ account holder has no SWG allocation, the DWG allocation may be used to land and sell scamp.	Gag: .567 MP gutted weight Red Grouper: 5.37 MP gutted weight Other shallow water grouper: .510 MP
Goliath (Jewfish)	Harvest Prohibited		
Other Reef Fish			
Gray Triggerfish	14" fork length	None	106,000 lbs. round weight
Hogfish	12" fork length	None	None
Greater Amberjack	36" fork length	2,000 lbs.	409,000 lbs. round wt. March—May Closure
Lesser Amberjack	14" - 22" fork length slot limit	None	None
Banded Rudderfish	14" - 22" fork length slot limit	None	None

Marine Sanctuaries and Area Closures *continued*

Florida Keys National Marine Sanctuary

The following locations are closed to all fishing. Anchoring of fishing vessels is also not allowed. The boundaries of the areas are as follows:

EEZ portion of Tortugas North Ecological Reserve		
Point	North lat.	West long.
A	24E40'00"	83E06'00"
B	24E46'00"	83E06'00"
C	24E46'00"	83E00'00"
D	24E06'00"	83E38'00"
Tortugas South Ecological Reserve		
Point	North lat.	West long.
A	24E33'00"	83E09'00"
B	24E33'00"	83E05'00"
C	24E18'00"	83E05'00"
D	24E18'00"	83E09'00"
A	24E33'00"	83E09'00"



Marine Sanctuaries and Area Closures *continued*

East Flower Garden Bank Boundary Coordinates:		
Position	Latitude	Longitude
E-1	27°52'54.84" N	93°37'41.84" W
E-2	27°53'35.80" N	93°38'23.90" W
E-3	27°55'14.61" N	93°38'40.89" W
E-4	27°57'31.68" N	93°38'33.81" W
E-5	27°58'28.63" N	93°37'46.67" W
E-6	27°59'02.38" N	93°35'32.29" W
E-7	27°59'01.47" N	93°35'10.23" W
E-8	27°55'23.35" N	93°34'15.32" W
E-9	27°54'05.02" N	93°34'19.42" W
E-10	27°53'27.68" N	93°35'05.54" W
E-11	27°52'53.04" N	93°36'57.77" W

West Flower Garden Bank Boundary Coordinates:		
Position	Latitude	Longitude
W-1	27°49'11.14" N	93°50'45.83" W
W-2	27°50'13.34" N	93°52'11.04" W
W-3	27°51'13.81" N	93°52'52.20" W
W-4	27°51'33.39" N	93°52'51.24" W
W-5	27°52'50.86" N	93°52'25.34" W
W-6	27°55'01.91" N	93°49'44.25" W
W-7	27°54'59.30" N	93°48'38.11" W
W-8	27°54'36.23" N	93°47'10.91" W
W-9	27°54'15.78" N	93°46'49.85" W
W-10	27°53'36.61" N	93°46'51.82" W
W-11	27°52'58.32" N	93°47'15.82" W
W-12	27°50'41.24" N	93°47'22.70" W
W-13	27°49'11.88" N	93°48'43.28" W

Coral/Shellfish/Other

Corals and Coral Reefs

Allowable Octocorals	Quota: 50,000 colonies (Gulf and Atlantic)
Live Rock	Harvest or possession of wild live rock is prohibited. Harvest and possession of aquacultured live rock by permitted individuals.
Other Marine Life Organisms	Marine life organisms from the EEZ harvested or possessed by Florida residents or landed in Florida are subject to Florida's Marine Life Rule. Contact Florida Fish and Wildlife Commission for more information 850-488-4676.

Species	Size Limit	Trip Limit	Quotas/Closed Seasons
Shellfish			
Stone Crab	Minimum 2 ¾" claw	None	Season closed 5/16–10/14
Spiny Lobster	Carapace more than 3" or tail more than 5 ½". Divers must measure in water	None	Season closed 4/1–8/5
Shrimp	None, but white shrimp taken in the EEZ and transported to Louisiana must comply with the minimum size limit of that state.	None	Shrimp trawlers must have a BRD installed on each net rigged for fishing. Royal red shrimp is exempt. Royal red quota—392,000 lbs tail weight. Royal red shrimp season opens 1/1 and closes when quota is filled.

Other Species

Red Drum	Illegal to harvest or possess in federal waters.
----------	--

Commercial Permit Requirements

Commercial Permit Requirements: (Earned income qualification criteria apply to mackerel, reef fish, and shark permits.) Applications for permits may be obtained from National Marine Fisheries Service, Southeast Regional Office, 263 13th Avenue S., St. Petersburg, FL 33701, (telephone 877-376-4877), except for tuna permits, which may be obtained by calling 888-872-8862 or 978-281-9260.

Permit	Required for:
Spiny lobster federal vessel permit or Florida commercial harvester license and certificates	Florida commercial harvester license and certificates required for harvest or possession in excess of the bag limits in the EEZ off Florida or to land or sell in Florida. Federal vessel permit required for harvest or possession in excess of the bag limits in the EEZ other than off Florida or sale other than Florida. May retain up to 50 spiny lobsters under the minimum size limit, and one per trap.
Spiny lobster tail separation permit	Possession of a separated spiny lobster tail in or from the EEZ aboard a vessel. Also requires a spiny lobster federal vessel permit or Florida state license and certificates. Fishermen with tailing permits must land spiny lobster all whole or all tailed. See additional remarks on page 17.
Shrimp	Permit required for all vessels that intend to fish for shrimp in EEZ waters of the Gulf of Mexico. Permit moratorium in effect. Shrimp trawlers must have a BRD installed on each net rigged for fishing.
Mackerel vessel permit	Harvest of king or Spanish mackerel under quota and in excess of the bag limits. Issuance of new king mackerel permits is under a moratorium, but existing permits are transferable. There is no moratorium on issuance of Spanish mackerel permits, but these permits are not transferable.
King mackerel gillnet endorsement	Harvest of king mackerel in the Florida west coast subzone using a gillnet. Also requires a mackerel vessel permit. Permit moratorium, area restrictions, and restrictions on permit transfer in effect.
Reef fish vessel permit	Harvest and sale of all reef fish listed in the Reef Fish Fishery Management Plan under quota (where applicable) and in excess of the bag limits (where applicable), except goliath grouper and Nassau grouper (for which all harvest is prohibited). Issuance of new reef fish permits is under a moratorium. Existing permits are transferable.

water, deck wash down, and gray water), excluding oily wastes from bilge pumping.

Injury to or Possession of Sanctuary Resources

The following activities are prohibited:

- Injuring or removing, or attempting to injure or remove, any coral or other bottom formation, coralline algae or other plant, marine invertebrate (e.g., *spiny lobster*, *queen conch*, *shell*, *sea urchin*), brine-seep biota or carbonate rock.
- Possessing within the Sanctuary (regardless of where collected, caught, harvested or removed), any coral or other bottom formation, coralline algae or other plant, or fish (except for fish caught by use of conventional hook and line gear).
- Placing or abandoning any structure, material or other matter on the seabed of the Sanctuary.

Flower Garden Banks National Marine Sanctuary Boundary Coordinates (NAD 83) Updated February 8, 2007.

"The Edges" 40 fathom contour is closed January 1–April 30. The Edges is a 390 nautical square mile region northwest of Steamboat Lumps.

The Edges Coordinates:		
	Latitude	Longitude
NW	28° 51" N	85° 16' W
NE	28° 51" N	85° 04' W
SW	28° 14' N	84° 54' W
SE	28° 14' N	84° 42' W

Stetson Bank Boundary Coordinates:		
Position	Latitude	Longitude
S-1	28° 09' 31.03" N	94° 18' 31.98" W
S-2	28° 10' 10.20" N	94° 18' 30.21" W
S-3	28° 10' 07.84" N	94° 17' 23.90" W
S-4	28° 09' 28.66" N	94° 17' 25.68" W

Marine Sanctuaries & Area Closures

Flower Garden Banks National Marine Sanctuary

Phone: (409) 621-5151

Fax: (409) 621-1316

Email: flowergarden@noaa.gov

URL: <http://flowergarden.noaa.gov>

The following is an abbreviated summary of prohibited or otherwise regulated activities within the Flower Garden Banks National Marine Sanctuary:

For full text of the regulations contact the Sanctuary office, or see: 15 CFR, Pt. 922, Subpart L, §922.122(a); 15 CFR, Pt. 922, Subpart A, §922.3

Fishing and Related Activities

The following activities are prohibited:

- Fishing by any means (e.g. *spear guns, powerheads, traps, longlines, nets*) **except** conventional hook and line gear.
- Possessing, except while passing through the Sanctuary without interruption, any fishing gear, device, or equipment (e.g. *trawl gear, spearguns*) **except** conventional hook and line gear.
- Possessing fish caught by any means **other** than conventional hook and line.
- Feeding fish.

Conventional hook and line gear means any fishing apparatus operated aboard a vessel and composed of a single line terminated by a combination of sinkers and hooks or lures and spooled upon a reel that may be hand or electrically operated, hand-held or mounted.

Anchoring and Mooring

The following activities are prohibited:

- Anchoring any vessel within the Sanctuary boundaries.
- Mooring a vessel over 100 feet in registered length on a Sanctuary mooring buoy.

Discharges

Discharging or depositing any material or other matter within the Sanctuary is prohibited, with the following exceptions:

- Fish, fish parts, chumming materials or bait used in, or resulting from, fishing with conventional hook and line gear.
- Biodegradable effluents incidental to vessel use and generated by an approved marine sanitation device.
- Water generated by routine vessel operations (e.g. *engine exhaust, cooling*

Commercial Permit Requirements continued

Aquacultured live rock permit	Possession or harvest of cultivated live rock. Florida state permits are also required to land live rock in Florida. Wild live rock possession/harvest prohibited.
Allowable octocoral permit	Harvest or possession of allowable octocoral, other than allowable octocoral that is landed in Florida. Appropriate Florida state permits are required to land allowable octocoral in Florida
Commercial tuna categories:	Vessels must have one of these permits to sell Atlantic bluefin tuna, albacore, Atlantic bonito, bigeye tuna, skipjack tuna, or yellowfin tuna. Separate Atlantic bluefin quota and gear restrictions apply to each category. For further information contact the Atlantic tunas information line (888-872-8862) or NMFS HMS Management Division at 978-281-9260.
General, Longline, Purse seine, Harpoon, Charter/headboat	
Swordfish vessel permit	Vessels must have a directed or incidental limited access permit for commercial harvest and sale of swordfish under quota.
Shark vessel permit	Vessels must have a directed or incidental limited access permit for harvest and sale of sharks listed in the management unit of the Atlantic Sharks Fishery management Plan under quota and in excess of bag limits.
Dealer Permits	A dealer permit is required for a dealer to receive Gulf reef fish harvested from federal waters of the Gulf of Mexico. A Gulf IFQ dealer endorsement is also required. Call 1-866-425-7627 for more information.

Other Requirements & Restrictions

- January 1–April 30 closure of “The Edges” 40 fathom contour, a 390 nautical square mile region northwest of Steamboat Lumps.

Boundaries:

NW = 28° 51'N, 85° 16'W

NE = 28° 51'N, 85° 04'W

SW = 28° 14'N, 84° 54'W

SE = 28° 14'N, 84° 42'W

- Vessel monitoring systems are required onboard all vessels with federal commercial permits for Gulf reef fish, including charter vessels/headboats that also have a commercial reef fish permit.
- Entangling nets may not be used for directed harvest of reef fish.
- Reef fish taken under the recreational bag limit may not be sold.

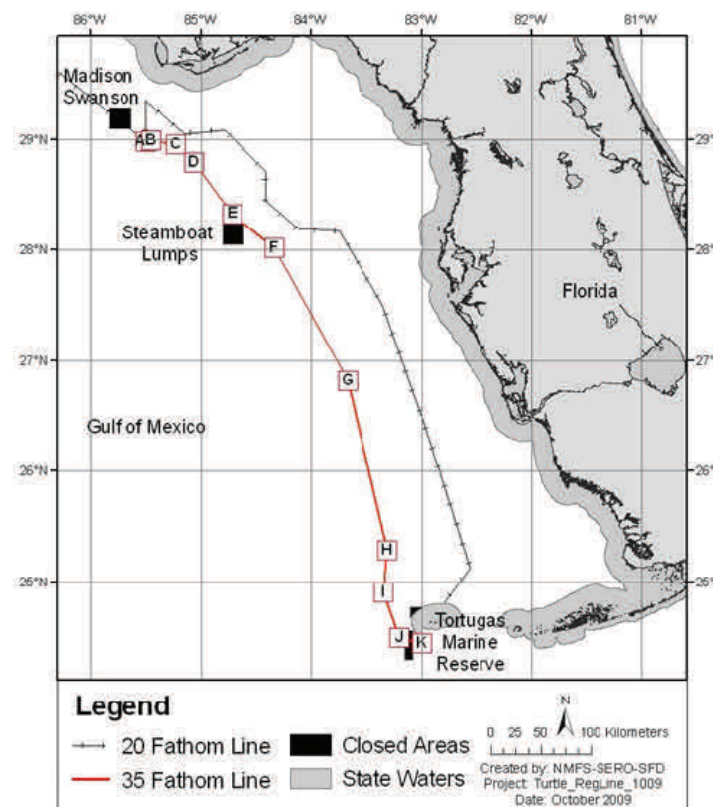
Other Requirements/Restrictions continued

- Vessels with shrimp trawls or entangling net gear aboard may not exceed the recreational reef fish bag limits.
- Venting tools and dehooking devices are required on board all vessels participating in the reef fish fishery.
- The use of non-stainless steel circle hooks is required when using natural baits in the reef fish fishery.
- Commercial vessels are prohibited from retaining reef fish caught under the recreational size and bag/possession limits when commercial quantities of Gulf reef fish are on board.
- Reef fish as bait, except sand perch or dwarf sand perch is prohibited.
- Stressed areas for reef fish begin at the shoreward boundary of federal waters and generally follow the 10 fathom contour from the Dry Tortugas to Sanibel Island; the 20 fathom contour to Tarpon Springs; the 10 fathom contour to Cape San Blas; the 25 fathom contour to south of Mobile Bay; the 13 fathom contour to Ship Island, Mississippi; the 10 fathom contour off Louisiana; and the 30 fathom contour off Texas. In designated "stressed areas" use of roller trawls, and power heads is prohibited.
- Reef fish gear is limited to no more than 3 hooks in a special management zone off Alabama. Nonconforming gear is restricted to bag limits, or for reef fish without a bag limit to 5% by weight of all fish aboard.
- Operators of vessels with Gulf of Mexico reef fish commercial or charter vessel/headboat permits comply with guidelines for proper care and release of incidentally caught smalltooth sawfish and sea turtles must and possess on board specific gear to ensure proper release of such species.
- A state may regulate vessels that are registered in that state and that are fishing in federal waters for species for which there are no federal fishery management plans or applicable federal regulations.
- All fish except for bait and oceanic migratory species taken from federal waters must have heads and fins intact through landing. Legal size fish within a bag limit may be consumed at sea.
- The use of longlines and buoy gear for reef fish is prohibited inside of 50 fathoms west of Cape San Blas, Florida. Vessels fishing within this zone and possessing longlines or buoy gear may not exceed the recreational bag limits, and for reef fish without a bag limit, 5% by weight of all fish aboard. See page 15 for new buoy gear regulations.
- Pelagic longlining for highly migratory pelagic is prohibited from the DeSoto Canyon area. Contact the National Marine Fisheries Service at 301-713-2347 for detailed coordinates.

Other Requirements/Restrictions continued

Reef fish bottom longline rules:

















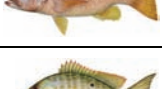







- The use of bottom longline gear in the reef fish fishery east of Cape San Blas, Florida, shoreward of a line approximating the 35-fathom depth contour is prohibited from June through August;
- Reduce the number of bottom longline vessels operating in the fishery through a longline endorsement provided only to federally-permitted vessels with demonstrated average annual landings of 40,000 pounds of fish taken by fish traps or longlines during 1999-2007;
- Maximum number of hooks that may possessed onboard each reef fish bottom longline vessel is 1,000 hooks total, only 750 of which may be fished or rigged for fishing at any time; and
- Longline endorsement required.



To report federal fishing violations call the

24 hour toll-free hotline: 1-800-853-1964

Identification Chart Artwork © Diane Rome Peebles

Red Snapper		Black Grouper	
Vermilion Snapper		Gag Grouper	
Lane Snapper		Red Grouper	
Gray/Mangrove		Yellowmouth	
Cubera		Yellowfin	
Mahogany		Scamp	
Schoolmaster		Greater Amberjack	
Yellowtail Snapper		Lesser Amberjack	
Dog Snapper		Banded Rudderfish	
Mutton Snapper		Cobia (ling)	
Blackfin		Spanish Mackerel	
Silk Snapper		King Mackerel	

Abbreviated Commercial Fishing Regulations for Gulf of Mexico Federal Waters

Updated 12/18/12



Special Pull-Out Section



Gulf of Mexico Fishery Management Council

2203 N. Lois Avenue
Suite 1100
Tampa, FL 33607

Tel: 813-348-1630
Fax: 813-348-1711
Email: gulfcouncil@gulfcouncil.org
Web site: www.gulfcouncil.org

To report federal fishing violations call the

24 hour toll-free hotline: 1-800-853-1964

Species	Size Limit	Trip Limit	Quotas/Closed Seasons	Remarks
Red Snapper	13" TL	See remarks	3.542 MP	Commercial red snapper is managed under an IFQ program. Anyone commercially fishing for red snapper must possess IFQ allocation and follow established protocols.
Vermilion Snapper	10" TL	None	None	NOTE: The Gulf Council is considering a Catch Share program for the entire commercial reef fish fishery and has set a control date of December 31, 2008 for all reef fish. A control date provides notice to affected fishermen that if the Council chooses to further restrict participation in the commercial reef fish fishery, they may use the control date to determine a permit holder's eligibility to participate in a catch share program.
Lane Snapper	8" TL			
Gray/Mangrove, Cubera, Mahogany, Schoolmaster, Yellowtail Snapper, Dog	12" TL			
Mutton Snapper	16" TL			
Blackfin, Silk, Queen and Wenchman	None			
Gag Grouper (SWG)	22" TL	Grouper are managed under an IFQ program. Anyone commercially fishing for red snapper must possess IFQ allocation and follow established protocols.	.567 MP	*Scamp is considered a SWG species. For purposes of the IFQ, once an IFQ account holder's other SWG allocation has been landed and sold, or transferred, or if the IFQ account holder has no SWG allocation, the DWG allocation may be used to land and sell scamp. **For purposes of the IFQ, speckled hind and Warsaw grouper are also included as SWG.
Red Grouper (SWG)	18" TL		5.37 MP	
Black Grouper (SWG)	24" TL		Other SWG .510 MP	
Yellowfin (SWG)	20" TL			
Scamp (SWG)*	16" TL		1.127 MP	
Yellowmouth (SWG)	None			
Snowy, Yellowedge (DWG)				
Speckled Hind, Warsaw **(DWG)				
Hogfish	12" FL	None	None	106,000 pounds round weight
Gray Triggerfish	14" FL			
Greater Amberjack	36" FL	2,000 lbs.	503,000 pounds round weight	March—May Season Closure
Lesser Amberjack, Banded Rudderfish	14" - 22" FL		None	
Stone Crab	Min 2¾" claw	None	Season closed 5/16—10/14	
Spiny Lobster	Carapace more than 3" or tail more than 5½"	None	Season closed 4/1—8/5 Divers must measure in water.	
Cobia (ling)	33" FL	Daily bag and possession limit of 2 per person		
Spanish Mackerel	12" FL	None	Quota: 5,187 MP Gulf group. Season opens 4/1 and closes when quota is filled.	
King Mackerel	24" FL		Managed by zone—see page 4 or check with Council on closures.	

SWG = Shallow Water Grouper

DWG = Deep Water Grouper

Southeast Fisheries Observer Programs - Panama City**Pre-Trip Safety Check**

OBS TRIP ID _____

DATE _____

VESSEL NAME _____

VESSEL # _____

Life Saving Equipment (circle Y for yes or N for no)**CGVSE**Safety Examination Decal? **Y / N**

Decal # _____

Date of Expiration: ____ / ____

Vessel Distance Rating: ____ NM

**EPIRB**EPIRB present? **Y / N**EPIRB Category: **I / II**Stowed in a float-free location? **Y / N**

EPIRB Registration Expiration Date: ____/____

Registered To: _____

Hydrostatic Release Exp. Date: ____ / ____ / **NA**

Battery Expiration Date: ____ / ____

FLARES

3 of any flare required for operations <3nm offshore

3 Parachute, 6 Hand & 3 Smoke required for operations >3nm offshore

Record flare expiration dates:

Hand: ____ / ____ Hand: ____ / ____ Smoke: ____ / ____ Parachute: ____ / ____

Hand: ____ / ____ Hand: ____ / ____ Smoke: ____ / ____ Parachute: ____ / ____

Hand: ____ / ____ Hand: ____ / ____ Smoke: ____ / ____ Parachute: ____ / ____

PFDs AND IMMERSION SUITS (not including observer equipment)Personal Floatation Device for each **POB**? **Y / N**

of PFDs ____

Immersion suit for each **POB**? **Y / N**

of Immersion Suits ____

*required in federal waters above 32 N latitude

FIRE FIGHTING EQUIPMENT

Vessels <26 ft require 1 B-I unless equipped with an outboard in certain conditions

Vessels >26 ft but <40 ft require 2 B-I or 1 B-II

Vessels >40 ft but <65 ft require 3 B-I or 1 B-II & 1 B-I

	Location	Type	Service Date
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____

STATION BILLS posted? Y / N

ONBOARD DRILLS logged? Y / N

LIFE RAFTS AND RINGS

Orange ring buoy with line attached? Y / N

Rigid life float? Y / N (>12nm but <20nm until 2015)

Inflatable life raft? Y / N

Capacity for all **POB**? Y / N

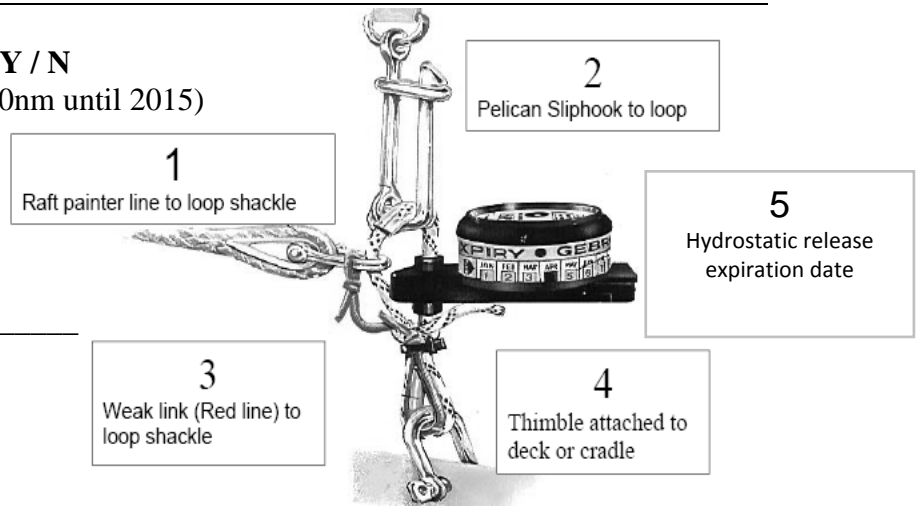
Life raft Capacity _____

Raft Repack Date ____ / ____ / ____

Hydrostatic Release Exp. Date: ____ / ____ / ____

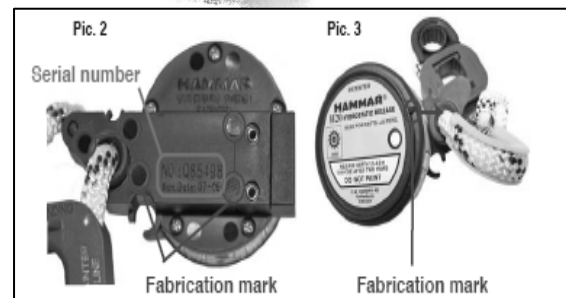
Life raft configured correctly*? Y / N

*Please take picture of configuration



5 Fabrication Marks Present? Y / N

Upper Fabrication mark towards rope? Y / N



Please provide signatures to verify that a safety check was conducted and that the information above is accurate.

Observer: _____ Date: ____ / ____ / ____

Owner/Operator: _____ Date: ____ / ____ / ____

Fisherman Feedback Form

The information on this form will be used by the NOAA Fisheries Panama City Observer Programs to evaluate how well the observers are performing their duties and to serve as a line of communication between the fishermen and the Observer Program.

Observers are asked to leave a copy of this comment card with the vessel after the completion of a trip. Please fill out this form after each trip that you have been covered by an observer from the Panama City Observer Program. This form can be filled out by the captain or owner of the vessel.

Please provide us with some feedback or request more information about the observer program by calling, emailing, or sending this form back to:

Simon Gulak, Observer Coordinator
NOAA Fisheries
3500 Delwood Beach Rd
Panama City, FL 32408-7403
Phone: (850) 234-6541 ext. 236 Cell: (850) 387-0701 Fax: (850) 235-3559
simon.gulak@noaa.gov

Help develop a program that will work better for you. We appreciate your feedback.

Thank you,
Simon Gulak, Observer Coordinator, Panama City Observer Programs

Vessel Name _____ **Captain or Owner Name** _____

Landing Date (mm/dd/yy) _____ **Port** (City, State) _____

Please check the Yes or No box for each question:

- | | Yes | No |
|--|--------------------------|--------------------------|
| 1) Where the logistics in setting up the trip acceptable? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2) Was the observer on time and prepared for the trip? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3) Did the observer review the safety checklist with you? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4) Was the observer courteous and polite and get along with the crew? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5) Did the observer record the positions (lat/lon) for all the hauls? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6) Did the observer explain their sampling requirements and protocols? | <input type="checkbox"/> | <input type="checkbox"/> |
| 7) Did the observer take length measurements of fish caught? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8) Did the observer take catch information from the work deck? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9) Did the observer identify fish species correctly? | <input type="checkbox"/> | <input type="checkbox"/> |

10) Did you have any other concerns regarding the observer or observing procedures, or safety issues during the trip? ☐ ☐

If yes, please explain in comments below:

Would you like more information from the observer program?

- ☐ Copy of this trips logs
- ☐ Vessel Reimbursement Form with Instructions
- ☐ More information about observers and observer programs
- ☐ Copy of current fishing regulations
- ☐ List of Coast Guard vessel inspectors by area
- ☐ Copy of current selection letter

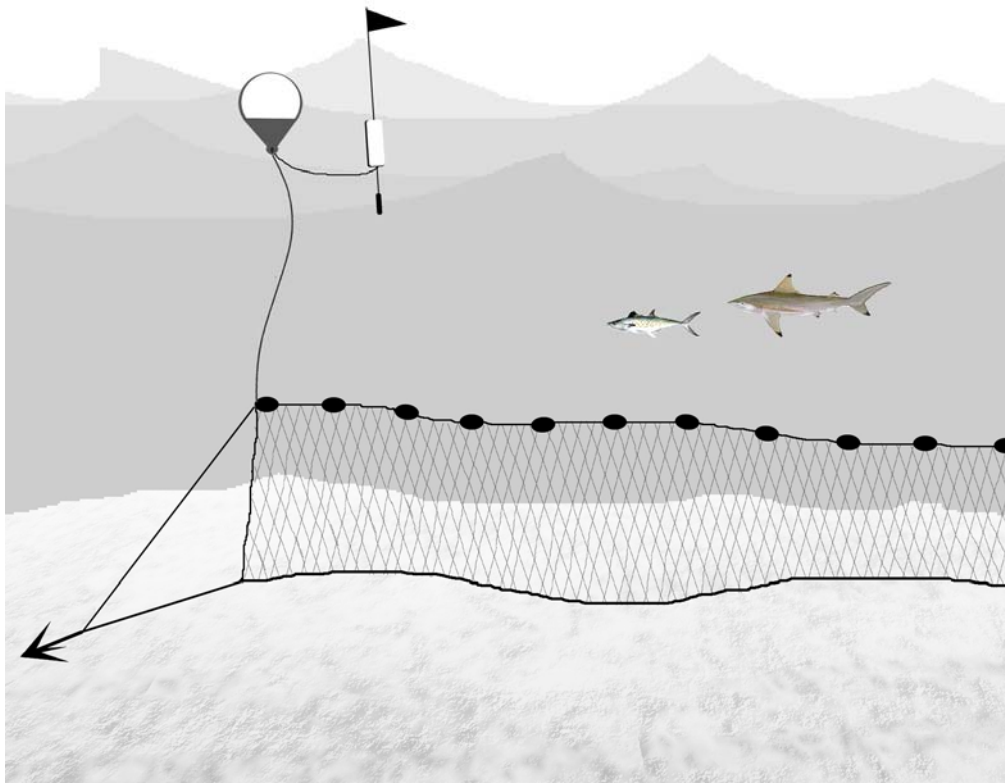
If you requested information above, please indicate your preferred method of delivery and leave the appropriate contact information:

- ☐ Phone _____
- ☐ Fax _____
- ☐ Email _____
- ☐ Mail _____

To verify that this form was filled out by the appropriate captain/owner, please sign the line below.

Captain or Owner Signature: _____

Southeast Gillnet Observer Program Manual



Compiled by Michelle Passerotti & Simon Gulak

5th December 2011

NOAA Fisheries Panama City Laboratory
Southeast Fisheries Science Center

SOUTHEAST GILLNET OBSERVER PROGRAM INSTRUCTIONS

Data sheets should be arranged and numbered in the following order:

Sheet Order	Data Sheet	Page numbering
1	Trip summary	Page 1
2	Vessel safety check	None
3	Vessel weighout (usually a copy from the fish house)	None
4	Vessel reimbursement	None
5	Gear log 1	Page 2
6	Gear log 1 2 nd page (only include if used)	Page 3
7	Haul log (1 st haul from Gear 1)	Page 4
8	Catch log	Page 5
9	Animal log	Page 6
10	Incidental take (Turtle, Mammal or Bird)	None
11	Gear log 2	Page 7
12	Haul log (1 st haul from Gear 2)	Page 8
13	etc	etc

TRIP SUMMARY INSTRUCTIONS

The trip summary is to be the cover sheet to your gillnet trip data when you send it in. It is filled out after the trip. If multiple trips are conducted on the same vessel, you must still have a trip summary for each trip.

OBS/TRIP #: Record the three character observer/trip identifier. This should be used on all data forms and field notes for a single trip.

Example: MSP001.

VESSEL NAME: Record the name of the vessel. Care should be taken to record the correct spelling of the vessel's name. Do not use punctuation; hyphens, commas, or periods and data is entered in capital letters.

Example: MR ROGERS, SY KAI MAI, MISSYS DREAM

VESSEL NUMBER: Record the six digit U.S. Coast Guard Documentation Number. This should be displayed prominently on the vessel. If the vessel does not have a Coast Guard Number, record the state registration number and include the two letter state abbreviation prefix. This is not the same as the NMFS or state fishing permit number.

Example: USCG documentation number -234567 or State registration number - FL2345XX

OWNER/CAPTAIN NAME: Record the first and last name of person responsible for daily vessel operations

OF CREW: Record number of persons onboard including the captain, not including observer

INCIDENTAL TAKE Y / N: Indicate whether incidental take was caught (marine mammal, sea bird, sea turtle, sawfish).

IF YES WHICH SET NUMBERS: Record SET numbers in which incidental take was caught.

BIOLOGICAL SAMPLES TAKEN: Indicate whether biological samples were taken during the trip.

CHECK IN SHEET INCLUDED: Indicate whether a sample check in sheet is included with data

DEPARTURE DATE: Record the month, day, year and time that the vessel left the dock and the trip began (mm/dd/yyyy).

DEPARTURE PORT: Record the city and the state (and specific dock location, if available) where the vessel left the dock and the trip began.

RETURN DATE: Record the month, day, year, and time that the vessel returned to the dock and the trip ended (mm/dd/yyyy).

RETURN PORT: Record the city and the state (and specific dock location, if available) where the vessel returned to the dock and the trip ended.

SEA DAYS: Record the number of days spent at sea. One (1) sea day is tallied for any amount of time spent at sea, even if less than 24 hours.

NUMBER OF SETS: Record the number of sets done during the trip. Include all sets, whether they were observed or not.

FALSE STRIKE Y/N: Indicate whether a false strike (leaving the dock and returning without setting any gear) occurred

TARGET: Record the primary category being targeted for the trip by circling the appropriate code. This information is obtained from the captain **prior** to fishing activity.

SHX = shark TELEOST = finfish

MIX = multiple targets including both sharks and finfish

WEIGH OUT LOCATION: Record the location that weigh out of catch from the trip was done. Name of fish house, dealer, and/or dock would be ideal.

COPY INCLUDED Y / N: Indicate whether a copy of the weigh out is included with the trip data. Every effort to obtain a copy of the weigh out form should be made. If weigh out occurs after the observer has left the area, the captain/owner/dealer/fish house can fax or mail a copy of the weigh out to the observer coordinator -- (850) 235-3559.

INVOICE: Indicate whether a copy of the reimbursement invoice is included with the trip data. **It is the observer's responsibility to give the form to the owner/captain after the trip.** The observer should fill out their Observer Trip ID, name, and the dates of the trip (sea days). **Be sure to get captain/owner SS# and signature!** The observer can turn in the reimbursement invoice with their data, or the owner/captain can mail or fax a copy to the observer coordinator. If you leave the invoice form with the owner/captain, include the **INVOICE INSTRUCTIONS** with the reimbursement invoice form. Multiple trips on the same vessel can be included in one invoice.

VESSEL ACCOMODATIONS: Record observations about the vessel and vessel accommodations including the presence or absence of a head, AC or heat, a bunk and bunk location, fresh water, shower, and infections and cleanliness of crew. These observations are for the observer and the observer program only, and will help with future coverage of the vessel.

COMMENTS: Record any comments about the trip, the vessel, the crew, or any observations about the catch. Information on drug/alcohol use by the captain or crew should be recorded here as well. Please use the comments section liberally. If more space is required, use the back of the sheet and include "see back" on the front. We like comments; they will sometimes help avoid a phone call.

GILLNET GEAR CHARACTERISTICS LOG

This log contains detailed questions about the gear fished. Complete a new log for each uniquely configured gear (as defined below) **hailed** during a trip. These unique configurations may be based on variables such as number of nets per gear, floatline length, anchor weight, *etc.* Any changes in these fields will require completion of a new Gillnet Gear Characteristics Log. Number each gear configuration sequentially. If the gear is set out and hauled more than once during a trip, do not complete a new Gillnet Gear Characteristics Log for the multiple hauls. Rather, record on the Gillnet Haul Log which gear numbers are being hauled. In addition, record any other information necessary to understand the manner in which the gear was set/hauled in COMMENTS.

If the vessel has two or more identical gears which are hauled separately, complete only one Gillnet Gear Characteristics Log and record the quantity of identical gears described in GEAR NUMBER(S) (#1). See the gillnet definitions below and GEAR NUMBER(S) (#1) for more information on defining and numbering gears.

Become familiar with the following definitions (SEE FIGURE AT END OF DOCUMENT).

DEFINITIONS

Bridles: The trailing ends of the floatline and leadline on an individual net.

Buoyline: A line that connects the buoy(s) or high flyer(s) at the surface to the gear (anchor or net) fishing in the water below. A line that connects the gear to the vessel is not considered a buoyline.

Dropline: A line that connects the floats on the water's surface to the mainline/floatline. Drogelines are used along the entire string to suspend the gear in the water column.

Gear: A gillnet, or series of gillnets connected by bridles, with or without spaces in between, commonly referred to as “the string”.

Gillnet: A vertical wall of netting, typically stretched between a weighted leadline on the bottom and a floatline, with or without floats, on the top to support it vertically in the water column.

Groundline: A line that connects a gillnet or gillnet bridle to an anchor. If no anchor is used, there is no groundline.

Meshes/Tie: The number of meshes between ties.

Space: A space greater than or equal to 2.5 feet between nets, continuous from the floatline to the leadline. This space may be caused by the way in which the net bridles are attached.

Tie: A knot that secures the body of the net to the floatline or leadline.

Tiedown: A line used between the floatline and the leadline as a way to create a pocket or bag of netting. It is the working height of the net.

Ties/Cork: The number of Ties between Corks (Floats).

Weak link: A breakable component of gear that will part when subjected to a certain tension load.

INSTRUCTIONS

GEAR INFORMATION

NOTE: Record in COMMENTS any calculations used to answer any of the following questions.

1. GEAR NUMBER(S): Record the consecutive number assigned to each uniquely configured gear hauled and for which characteristics are described. See the definition of gear in the introduction.

NOTE: If two or more identical gears are used, use one Gillnet Gear Characteristics Log and list quantity of strings with this configuration.

2. NUMBER OF STRINGS: Record the quantity of strings with these unique characteristics.

Example: The first uniquely configured gear is “1”, and its characteristics will be recorded on one Gillnet Gear Characteristics Log. The next two **identical** gears are listed as gear number “2”, “Number of Strings” is denoted as ‘2’ and their identical characteristics will be recorded on a second Gillnet Gear Characteristics Log.

GEAR CHARACTERISTICS

NOTE: The following fields characterize the **entire gear, i.e. the string**, and not just one panel.

3. LENGTH: Record the length, to nearest foot, of the entire string of gear. This information may be obtained from the Captain.

4. NUMBER OF PANELS: Record the number of unique panels comprising the gear. A panel is considered unique if mesh size and/or net depth are different from the other panels in the string. If there are two panels of gear that are identical (except for length), but separated by a space between bridles **less than 50 ft**, consider these a single panel.

5. TOTAL WEIGHT OF LEADLINE: Record the total weight of the leadline for the entire string of gear, to the nearest pound. This information may be obtained from the Captain.

6. SECURING METHOD: Indicate the manner in which this gear is secured by circling the appropriate code: Sea Bottom, Vessel Only, Combination, or None.

NOTE: "Combination" refers to gear secured to both the vessel and sea bottom. "None" and "Vessel Only" apply only to drift gear. "Ocean Bottom" and "Combination" apply only to anchored gears.

GROUNDLINE

7. GROUNDLINE Y/N: Indicate whether a groundline is used by circling the appropriate letter.

8. GROUNDLINE LENGTH: If present, record length in feet of groundline.

9. GROUNDLINE DIAMETER: If present, record diameter in inches (3 decimal places) of groundline.






ANCHORS

10. ANCHOR(S) Y/N: Indicate whether anchors were used on the gear by circling the appropriate letter.

11. NUMBER OF ANCHORS: Record the number of anchors used for the entire string.

12. TOTAL WEIGHT: Record the combined total weight, to the nearest pound, of the anchors utilized for the entire string. This information may be obtained from the Captain.

13. STYLE: Indicate the style of anchor(s) used on the string (see examples below). Anything used as an anchor that does not fit a category described here should be listed as "other", and a description should be written in the Comments section of the gear log.

 Danforth		DANFORTH - STYLE
 Railroad Track	 Mushroom	
 Kedge	 Grapnel	OTHER

SURFACE BUOYS

14. HIGHFLIERS Y/N: Indicate whether highfliers are used on the string by circling the appropriate letter. If Yes, record the total number used in the space.

15. POLYBALLS Y/N: Indicate whether polyballs are used on the string by circling the appropriate letter. If Yes, record the total number used in the space.

16. OTHER Y/N: Indicate whether types of buoys other than highfliers or polyballs are used on the string by circling the appropriate letter. If Yes, record the total number used in the space.

BUOYLINE

17. NUMBER OF BUOYLINE(S): Record the number of buoyline(s) used on this gear.

18. LENGTH: Record, to the nearest foot, the **average** length of the buoyline(s) used on this gear. This measurement should not include groundlines if groundlines are used. This information may be obtained from the Captain.

19. DIAMETER: Record, in inches, the **average** diameter, in inches (3 decimal places) of the buoyline used on this gear. This information may be obtained from the Captain.

Example: 3/8s is 0.375 inches.

WEAK LINKS (SEE FIGURE AT END)

20. USED ON SURFACE?: Record whether any weak links are used on the surface system of this gear by circling the appropriate letter.

21. NUMBER: Record the **total** number of surface system weak links used on this gear. This information may be obtained from the Captain. See Figure at end of instructions.

22. TYPE: Indicate the type of weak link(s) used on the surface system of this gear by recording the most appropriate term from the list below. This information **SHOULD** be obtained from the Captain.

Types: Unknown, Rope of Appropriate Breaking Strength, Off the Shelf, Overhand Knot, Hog Rings, Combination, or Other (record information in COMMENTS for Combination or Other).

23. USED ON STRING?: Record whether any weak links are used on the string (i.e. floatlines or endlines) of this gear by circling the appropriate letter.

24. NUMBER: Record the **total** number of string weak links used on this gear. This information may be obtained from the Captain. See Figure at end of instructions.

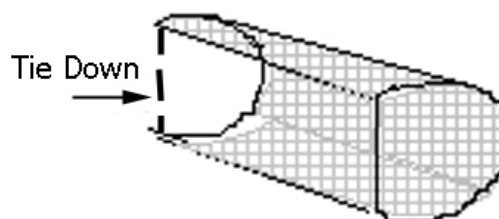
25. TYPE: Indicate the type of weak link(s) used on the string by recording the most appropriate term from the list below. This information **SHOULD** be obtained from the Captain.

Types: Unknown, Rope of Appropriate Breaking Strength, Off the Shelf, Overhand Knot, Hog Rings, Combination, or Other (record information in COMMENTS for Combination or Other).

TIEDOWNS

26. USED Y/N: Indicate whether tiedowns are used in this gear by circling the appropriate letter (See figure below).

27. LENGTH: Record, to the nearest tenth of a foot, the average length of the tiedowns used in this gear. This information may be obtained from the Captain.



ACTIVE	MARINE	MAMMAL
DETERRENT DEVICES		

An “active” marine mammal deterrent device is a device which emits sound which may be detected by a marine mammal.

28. USED Y/N: Indicate whether “active” marine mammal deterrent devices (i.e. pingers) were on this gear **when it was set** by circling the appropriate letter.

29. NUMBER: Record the number of active marine mammal deterrent devices (i.e. pingers) on the gear **when it was set**. This information may be obtained from the Captain.

30. FREQUENCY: Record the frequency of the active marine mammal deterrent devices used on this gear in kilohertz (kHz). If more than one frequency of active deterrent device is used, record the frequency of the majority of the active deterrent devices on the gear. If an equal number of different frequency active deterrent devices are used, record the highest frequency used. This information may be obtained from the Captain.
Example: 10kHz.

31. BRAND(S): Record which brand(s) of active marine mammal deterrent devices are used on this gear, from these options: Unknown, Dukane, Airmar, Fumunda, Combination (record all brands in the COMMENTS), or Other (record the brand in the COMMENTS).

PASSIVE MARINE MAMMAL DETERRENT DEVICES

A “passive” marine mammal deterrent device is a device which may provide reflection of marine mammal echolocation signals or be detected visually. If used, describe in the COMMENTS.

32. USED Y/N: Indicate whether “passive” marine mammal deterrent devices were on this gear **when it was set** by circling the appropriate letter. Example: Net material that is designed to be more acoustically visible to marine mammals.

33. NUMBER: Record the number of passive marine mammal deterrent devices on the gear **when it was set**. This information can be obtained from the Captain.

NOTE: If some or all of the nets in the gear are made from material that is designed to be more acoustically visible to marine mammals, record the **number of nets** within the gear made from this material.

NET CHARACTERISTICS

RECORD FOR EACH UNIQUE PANEL IN A STRING OF GEAR

NOTE: Changes in net depth, mesh size and mesh type or a space between bridles of **greater than 50 ft** will result in a new panel

34. LENGTH: Record, to the nearest foot, the horizontal distance of the panel, as measured along the floatline. This information may be obtained from the Captain.

NOTE: If there is a space between two nets, **do not** include this distance in the net length.

35. DEPTH (endline): Record, to the nearest tenth of a foot, the height of the panel. This value is obtained by measuring the length of the endline on the end of a net where the meshes are attached.

This information may be obtained from the Captain.

36. DROPLINES Y/N: Indicate whether droplines are used in this gear by circling Y or N.

37. LENGTH OF DROPLINES: Record length in feet of droplines, if present.

MESH

38. MESH TYPE: Record mesh type using one of the two numerical codes listed on the left of the datasheet: 01=Mono

02=Multi

09=Other (such as KGM net)

39. MESH COLOR: Record mesh color using one of three numerical codes listed on the left of the datasheet.

40. MESH SIZE: Stretched mesh size, in inches, measured inside knot to knot. This information may be obtained from the captain.

41. TWINE SIZE: Record the twine size number (industry standard, #2-#40) of the net mesh used in this gear (See list below). This information should be obtained from the Captain.

NOTE: This number should reflect the total diameter of the net webbing, and not the diameter of an individual strand which may be twisted with other strands to create the net webbing (i.e. multi-filament mesh).

Twine Size	Monofilament Diameter
#2 (210/2)	.23mm
#3 (210/3 or #69)	.28mm
#4 (210/4 or #104)	.33mm
#6 (210/6 or #139)	.40mm
#7	.45mm
#8 (#177)	.47mm
#9/#10 (210/9 or #208)	.52mm
#12 (210/12 or #277)	.57mm
#14	.62mm
#16	.66mm
#18	.70mm
#20	.74mm
#24	.81mm
#30	.90mm
#40	1.05mm

FLOATS

42. NUMBER OF FLOATS: Record the total number of floats attached to the floatline on the panel.

43. FLOAT DIAMETER: Record the diameter, to the nearest tenth of an inch, of the majority of floats on the floatline.

44. DISTANCE BETWEEN FLOATS: Record, to the nearest foot, the **average** distance along the floatline between ties used on this panel. This information may be obtained from the Captain.

45. HANGING RATIO (H/R): This value is the fractional ratio of the length of the floatline to the length that the net would be if it was taken off the floatline and stretched out. This value will be calculated by your coordinator using the distance between floats and number of meshes between floats. **If the Captain knows the hanging ratio of the net, record it on the data sheet. If not, leave this line blank.**

LEADLINE

46. TOTAL LEADLINE WEIGHT: Record the total weight of the leadline for this panel to the nearest pound. This information may be obtained from the Captain.

47. INTERNAL/EXTERNAL/BOTH: Indicate whether the leadline contains internal leads, external leads, or a combination by circling the appropriate term on the datasheet. An example of a combination would be a piece of gear with an internal leadline but with weight added via a second string of external leads.

48. NUMBER OF LEADS: If external leads are present, record the total number present on the panel.

SPACE(S) BETWEEN NETS

49. USED?: Record whether there is (are) any continuous space(s) **greater than or equal to 50 feet** between the nets in this gear by circling the appropriate letter (Y/N):

50. NUMBER: Record the **total** number of spaces present between the nets in this gear.

51. AVERAGE WIDTH: Record, to the nearest foot, the **average** width of the space(s) present between the bridles of the nets in this gear. This should be a weighted average.

Example: A gillnet string has ten nets with 9 spaces. Three of these spaces are approximately 3.5 feet wide and 6 spaces are approximately 4.5 feet wide. The average width for these spaces should be recorded as:
$$[(3 \times 3.5) + (6 \times 4.5)] \div 9 = 4.2$$

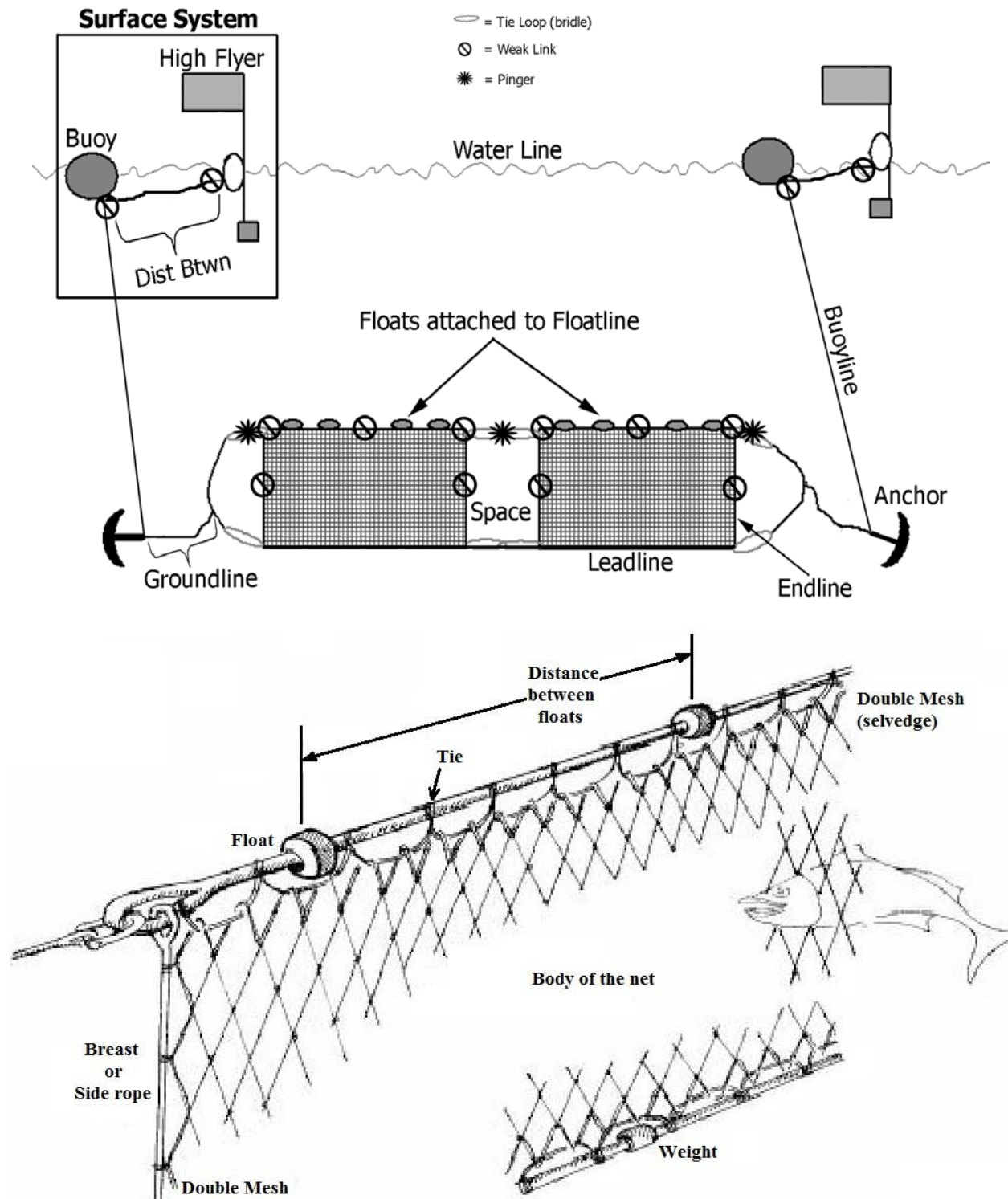
Round 4.2 to 4 feet.

CALC. BOX

This box is used to allow the coordinator to calculate the hanging ratio when the Captain does not have it available. Record the following whole counts for each panel:

52. MESHES/TIE: The number of meshes in between ties ("Meshes to the Tie"). This information may be obtained from the Captain.

53. TIES/CORK: The number of ties between floats ("Ties to the Cork"). This information may be obtained from the Captain.



PAGE ____ OF ____

OBS/TRIP #: _____

DATE LANDED: / /

TRIP ID: _____ (office only)

GEAR ID: _____ (office only)

Southeast Fisheries Science Center Gillnet Fishery Gear Log

GEAR NUMBER: 1NUMBER OF STRINGS (with this configuration): 2**COLOR**

Clear 01
 White 02
 Pink 03
 Black 04
 Green 05
 Blue 06
 Multi 07
 Red 08
 Other 09

*More than
 one color=
 Multi (07)

TYPE

Mono 01
 Multi 02
 Other 09

CALC. BOX

PANEL 1
 MESHES/TIE
52

TIES/CORK
53

PANEL 2
 MESHES/TIE

TIES/CORK

PANEL 3
 MESHES/TIE

TIES/CORK

WHOLE STRING

LENGTH: 3 ft NUMBER OF PANELS: 4 TOTAL WEIGHT OF LEADLINE: 5 lbs

SECURING METHOD (circle one): 6

Sea bottom Vessel only None
 Combination

GROUNDLINE: Y / N 7

LENGTH: 8 ft

DIAMETER: 9 in

ANCHOR(S): Y / N 10 NUMBER: 12

TOTAL WEIGHT: 11 lbs

STYLE: Danforth Combination Unknown
13 (circle one) Dead Weight Other (Describe in Comments)

PANEL 1 LENGTH: 34 ft DEPTH: 35 ft 36 DROPLINES: Y / N LENGTH: 37 ft

MESH TYPE: 38 COLOR: 39 SIZE: 40 in TWINE SIZE: 41

FLOATS NUMBER: 42 DIAMETER: 43 in DIST. B/T: 44 ft HANGING RATIO: 45

LEADLINE TOTAL WEIGHT: 46 lbs 47 INTERNAL / EXTERNAL / BOTH NUMBER: 48

PANEL 2 LENGTH: _____ ft DEPTH: _____ ft DROPLINES: Y / N LENGTH: _____ ft

MESH TYPE: _____ COLOR: _____ SIZE: _____ in TWINE SIZE: _____

FLOATS NUMBER: _____ DIAMETER: _____ in DIST. B/T: _____ ft HANGING RATIO: _____

LEADLINE TOTAL WEIGHT: _____ lbs INTERNAL / EXTERNAL / BOTH NUMBER: _____

PANEL 3 LENGTH: _____ ft DEPTH: _____ ft DROPLINES: Y / N LENGTH: _____ ft

MESH TYPE: _____ COLOR: _____ SIZE: _____ in TWINE SIZE: _____

FLOATS NUMBER: _____ DIAMETER: _____ in DIST. B/T: _____ ft HANGING RATIO: _____

LEADLINE TOTAL WEIGHT: _____ lbs INTERNAL / EXTERNAL / BOTH NUMBER: _____

49 SPACE BETWEEN PANELS: Y / N NUMBER: 50 AVERAGE WIDTH: 51 ft

BUOYS

NUMBER

HIGHFLIERS: Y / N 14

POLYBALLS: Y / N 15

OTHER: Y / N 16

BUOYLINE

NUMBER: 17

LENGTH: 18 ft

DIAMETER: 19 in

WEAK LINKS**USED ON**

SURFACE: Y / N 20

NUMBER: 21

TYPE: 22

USED ON

STRING: Y / N 23

NUMBER: 24

TYPE: 25

TIE DOWNS

USED: Y / N 26

LENGTH: 27 ft

MM DETERRENT DEVICES

28

ACTIVE USED: Y / N

NUMBER: 29

FREQUENCY: 30 kHz

BRAND: 31

32

PASSIVE USED: Y / N

NUMBER: 33

DESCRIBE IN COMMENTS

COMMENTS:

GILLNET HAUL LOG INSTRUCTIONS

OBS/TRIP #: Record the three character observer/trip identifier. This should be used on all data forms and field notes for a single trip. Example: MSP001.

VESSEL NAME: Record the name of the vessel. Care should be taken to record the correct spelling of the vessel's name. Do not use punctuation; hyphens, commas, or periods and data is entered in capital letters.

Example: MR ROGERS, SY KAI MAI, MISSYS DREAM

VESSEL NUMBER: Record the six digit U.S. Coast Guard Documentation Number. This should be displayed prominently on the vessel. If the vessel does not have a Coast Guard Number, record the state registration number and include the two letter state abbreviation prefix. This is not the same as the NMFS or state fishing permit number.

Example: USCG documentation number -234567 or State registration number - FL2345XX

LANDING DATE: Record the month, day, year, and time that the vessel returned to the dock and the trip ended (mm/dd/yyyy).

INCIDENTAL TAKE Y / N: Indicate whether incidental take was caught (marine mammal, sea bird, sea turtle, sawfish).

CATCH Y / N: Indicate whether animals were caught during this set by circling the appropriate letter. Any organism present in the meshes constitutes catch.

SET: Record the set number, in sequence of the total number of sets for the trip. A set occurs each time a piece of gear is deployed and then hauled back. Set/Haul may be substituted for clarity if the observer feels it necessary.

TARGET SPECIES: Record the species being targeted during this set by recording the 3-letter code for that species. This information should be obtained from the Captain before the set.

GEAR CHARACTERISTICS

GEAR NUMBER: Record the gear number corresponding to the piece of gear used for this set. This number should correspond to one of the gear logs for this trip.

GEAR CODE: Record 470 for drift gillnet, 475 for strike gillnet, and 480 for sink gillnet.

ENVIRONMENTAL

BOTTOM DEPTH: Record average depth (not a range) in whole feet. Depth can be obtained from electronics equipment.

BOTTOM TYPE: Record the predominant bottom type.

WIND DIRECTION: Record the direction the wind is coming from as a compass heading in degrees (360).

WIND SPEED: Record the wind speed in knots. Enter the maximum observed, not a range.

WAVE HEIGHT: Record the wave height in feet. Enter the maximum observed, not a range.

TDR USED Y / N: Indicate whether you used a Temperature Depth Recorder on this haul.

SET/HAUL TABLE

Fill in all blanks for each haul.

Do not fill in this section for false strikes.

SET BEGIN DATE: Record date of set.

SET BEGIN TIME: This is the time at which the first part of the net hits the water. Record time on a 24-hour clock.

BEGIN LATITUDE/LONGITUDE: Record in whole degrees, minutes, and decimal minutes. You are issued a GPS unit if there is not one on your vessel. Carry decimal minutes out to **three** places. Eg: Latitude 2780.231 Longitude 8514.348

BEGIN/END TEMPERATURE: Record the surface water temperature in whole degrees F.

HAUL BEGIN/END: This is the time at which the net starts to come out of the water. Record date, time as described for SET BEGIN/END.

HAUL BEGIN/END LATITUDE/LONGITUDE: Record in whole degrees, minutes, and decimal seconds, as described previously.

DURING HAULBACK

PROTECTED RESOURCES: Indicate whether seabirds, marine mammals, and/or sea turtles are present in the area during haulback by circling the appropriate letter. If so, record species to lowest taxonomic level possible.

NOTES: Record any additional pertinent information here.

GILLNET CATCH LOG INSTRUCTIONS

OBS/TRIP#: Record three-character observer/trip identifier used for the associated HAUL LOG. It must be the same for all logs and field notes associated with a single trip.

SET #: Record the set (or set/haul) number for the associated HAUL LOG.

PANEL: Record the panel number for the piece of gear from which catch was removed. This should correspond to one of the panel numbers on the associated **GEAR LOG**.

MESH SIZE: Record the mesh size of the piece of gear from which catch was removed. This should correspond to the panel number on the associated **GEAR LOG**.

ESTIMATED FORK LENGTHS –

Record information for all individuals caught, separating catch by *EACH UNIQUE PANEL*

SPECIES: Record the 3-letter species abbreviation from the SPECIES CODE LIST.

CODE: Record the 4 digit number code for each species from the SPECIES CODE LIST.

TOTAL # KEPT: Record the total number kept for each species caught.

TOTAL # DISCARDED LIVE: Record the total number discarded alive for each species caught.

TOTAL # DISCARDED DEAD: Record the total number discarded dead for each species caught.

When a species has individuals of more than one disposition, use a new line to indicate each disposition **even if the lengths are all the same**. Example: 60 SAS caught, all measuring 30-60 cm, 20 of which are discarded dead and 40 kept. Record SAS on two separate lines for the two dispositions with 20 and 40 listed in the 30-60cm bin accordingly.

LENGTH BINS (000-030 to 210-240): Record the number of each species in that length category for each disposition.

STATUS WHEN BOATED: Record the number of each species that were alive and dead when boated in the appropriate box. These numbers may be estimated from general proportions observed alive or dead coming on board.

[illegible]

GILLNET ANIMAL LOG INSTRUCTIONS

OBS/TRIP #: Record the three character observer/trip identifier. This should be used on all data forms and field notes for a single trip. Example: MSP001.

SET #: Record the set (or set/haul) number for the associated **HAUL LOG and CATCH LOG**.

PANEL: Record the panel number for the piece of gear from which catch was removed. This should correspond to one of the panel numbers on the associated **GEAR LOG, as well as to the CATCH LOG for this set**.

MESH SIZE: Record the mesh size of the piece of gear from which catch was removed. This should correspond to the panel number on the associated **GEAR LOG, as well as to the CATCH LOG for this set**.

ANIMAL INFORMATION

SPECIES

*** Record animal information for 10 individuals per species caught PER PANEL in each set. When this is not possible, preference is for sharks and commercially important species. Use sorting baskets to separate individuals for measurement by panel.**

SPEC #: Specimen numbers start with a value of 101, which should avoid being misread at the fish house (100 vs 001) and duplication with any incidental take specimen numbers (1, 2, 3 etc). Please number incidental takes starting with 001 and number sequentially as encountered within a single trip.

--- If there are multiple gear panels containing catch within a set, animal numbers should begin with the panel number followed by '01'. Example: specimens from Set 1 Panel 1 begin with '101', specimens from Set 1 Panel 2 begin with '201', etc. ---

NAME: Record the three letter abbreviation (SEE SPECIES CODE LIST) for each species, including marine mammals, sea turtles or sea birds that may be caught incidentally. Attempt to identify all animals to species. If you are unsure, do not hesitate to use genus or family abbreviations. **If unsure about ID, take pictures and list identifying characteristics in the comments section.**

CODE: Record the 4 digit species code (SEE SPECIES CODE LIST).

LENGTH: Attempt to obtain a straight line fork length measurement in centimeters from **10 individuals per species caught PER PANEL in each set. When this is not possible, preference is for sharks and commercially important species.** Do not try to piece animals together that have been cut. Estimated or measured lengths for incidentally taken mammals and turtles should also be recorded here. Additional information will be recorded on the marine mammal incidental take log, the sea bird life history forms, or the turtle life history forms. All measurements for sharks and finfish species are to be taken as straight line measurement. Skates and rays should be measured at their widest point, wing tip to wing tip (disc width). Measurements can easily be converted to centimeters using (1 foot =30 cm). Enter the defined length and record a 3 in the length code. If samples are taken (vertebrae, otolith, reproductive tract, stomach) then a straight line measurement **MUST** be taken.

MEASUREMENT CODE: Indicate the measurement type with the codes provided on the datasheets. Curved line estimates are only acceptable for sea turtle carapace.

<u>Measurement type</u>	<u>Code</u>
Straight line	1
Curved line	2
Estimated	3

SEX: Record the sex of this animal, coded as follows:

<u>Sex</u>	<u>Code</u>
Undetermined	U
Male	M
Female	F

TAG # OR COMMENT: Use this space to record information regarding the tag number of a newly tagged, recaptured, or retagged animal, or a comment on the captured animal. Record the complete tag number (including any alpha prefix) for each tag/release animal. Attempt to re-tag a live fish that already has a tag in place. Always request that a dead tagged animal be brought on board, and keep the tag and vertebrae samples of tagged dead sharks. This area may also be used to record a brief comment about an individual animal. Examples of comments include incidental take details, distinguishing characteristics for identification, or any other pertinent information related to the catch of that specimen.

TAG CODE: Indicate the origin of the tag number with the codes provided.

<u>Tag State</u>	<u>Code</u>
Tagged and released alive	1
Retagged and released alive	2
Recaptured and kept/released dead	3

SAMPLES TAKEN: Check the boxes for each type of samples taken (otolith, vertebrae, stomach, reproductive (includes shark reproductive tract and teleost gonads), fin clip) from individual animals. If you take a reproductive sample, always take a vertebrae sample as well (this goes for gonads and otoliths too). Again, if a tagged shark is kept by the fishers, please record the tag number and contact information and take a vert sample.

PHOTOGRAPHS: If you take photographs of an animal that was caught in the fishing gear, make sure that it is recorded on the Animal log. If you were unable to obtain a straight length measurement, record an estimated length. Check the photograph taken box and make a note of the number in the Comment field.

GILLNET TRIP SUMMARY
(This will be the cover sheet to your trip datasheets)

Obs./Trip #: _____ **Vessel name:** _____ **Vessel #:** _____

Owner/Captain Name: _____ **# of Crew:** _____

Incidental Take: Y / N

If Yes, what set number(s): _____

Biological Samples Taken: Y / N

Check In Sheet Included: Y / N

Departure Date: _____ **Time:** ____:____
mm/dd/yyyy

Departure Port: _____
City, State

Return Date: _____ **Time:** ____:____
mm/dd/yyyy

Return Port: _____
City, State

Sea Days: _____

Number of Sets: _____

False Strike: Y / N

Target: SHARK / TELEOST / MIX

Weigh out location: _____

Weigh out copy included: Y / N

Invoice: Only for trips longer than two days. Be sure to get captain/owner SS# and signature!

____ Enclosed with trip data (For multiple trips per invoice, indicate which Trip #: _____)

____ Left completed with captain/owner

Vessel accommodations:

Head: Y / N

AC and/or Heat: Y / N (circle which applies)

Bunk: Y / N

Bunk Location: _____

Fresh Water and/or Shower: Y / N (circle which applies)

Infections: Y / N

Comments:

Office use only:

Data received: ____/____/____

Data entry: ____/____/____

Dbase proofed: ____/____/____

Debrief: ____/____/____

Invoice filed: ____/____/____ / NA

Southeast Fisheries Science Center Gillnet Fishery Gear Log

GEAR NUMBER: _____ NUMBER OF STRINGS (with this configuration): _____

COLOR

Clear 01

White 02

Pink 03

Black 04

Green 05

Blue 06

Multi 07

Red 08

Other 09

*More than one color= Multi (07)

TYPE

Mono 01

Multi 02

Other 09

CALC. BOX

PANEL 1

MESHES/TIE

TIES/CORK

PANEL 2

MESHES/TIE

TIES/CORK

PANEL 3

MESHES/TIE

TIES/CORK

WHOLE STRING

LENGTH: _____ft

NUMBER OF PANELS: _____

TOTAL WEIGHT OF LEADLINE: _____lbs

SECURING METHOD (circle one):

Sea bottom

Vessel only

None

Combination

GROUNDLINE: Y / N

LENGTH: _____ft

DIAMETER: _____in

ANCHOR(S): Y / N

NUMBER: _____

TOTAL WEIGHT: _____lbs

STYLE:

(circle one)

Danforth

Dead Weight

Combination

Unknown

Other (Describe in Comments)

PANEL 1

LENGTH: _____ft

DEPTH: _____ft

DROPLINES: Y / N

LENGTH: _____ft

MESH

TYPE: _____

COLOR: _____

SIZE: _____in

TWINE SIZE: _____

FLOATS

NUMBER: _____

DIAMETER: _____in

DIST. B/T: _____ft

HANGING RATIO: _____

LEADLINE

TOTAL WEIGHT: _____lbs

INTERNAL / EXTERNAL / BOTH

NUMBER: _____

PANEL 2

LENGTH: _____ft

DEPTH: _____ft

DROPLINES: Y / N

LENGTH: _____ft

MESH

TYPE: _____

COLOR: _____

SIZE: _____in

TWINE SIZE: _____

FLOATS

NUMBER: _____

DIAMETER: _____in

DIST. B/T: _____ft

HANGING RATIO: _____

LEADLINE

TOTAL WEIGHT: _____lbs

INTERNAL / EXTERNAL / BOTH

NUMBER: _____

PANEL 3

LENGTH: _____ft

DEPTH: _____ft

DROPLINES: Y / N

LENGTH: _____ft

MESH

TYPE: _____

COLOR: _____

SIZE: _____in

TWINE SIZE: _____

FLOATS

NUMBER: _____

DIAMETER: _____in

DIST. B/T: _____ft

HANGING RATIO: _____

LEADLINE

TOTAL WEIGHT: _____lbs

INTERNAL / EXTERNAL / BOTH

NUMBER: _____

SPACE BETWEEN PANELS: Y / N

NUMBER: _____

AVERAGE WIDTH: _____ft

BUOYS

NUMBER

HIGHFLIERS: Y / N _____

POLYBALLS: Y / N _____

OTHER: Y / N _____

BUOYLINE

NUMBER: _____

LENGTH: _____ft

DIAMETER: _____in

WEAK LINKS

USED ON

SURFACE: Y / N

NUMBER: _____

TYPE: _____

USED ON

STRING: Y / N

NUMBER: _____

TYPE: _____

TIE DOWNS

USED: Y / N

LENGTH: _____ft

MM DETERRENT DEVICES

ACTIVE USED: Y / N

NUMBER: _____

FREQUENCY: _____kHz

BRAND: _____

PASSIVE USED: Y / N

NUMBER: _____

DESCRIBE IN COMMENTS

COMMENTS:

01/12/12

WEAK LINK TYPE CODES:

- 0 = Unknown
- 1 = Rope of Appropriate Breaking Strength
- 2 = Off the Shelf
- 3 = Overhand Knot
- 4 = Hog Rings
- 8 = Combination
- 9 = Other

Twine Size	Monofilament Diameter
#2 (210/2)	.23mm
#3 (210/3 or #69)	.28mm
#4 (210/4 or #104)	.33mm
#6 (210/6 or #139)	.40mm
#7	.45mm
#8 (#177)	.47mm
#9/#10 (210/9 or #208)	.52mm
#12 (210/12 or #277)	.57mm
#14	.62mm
#16	.66mm
#18	.70mm
#20	.74mm
#24	.81mm
#30	.90mm
#40	1.05mm

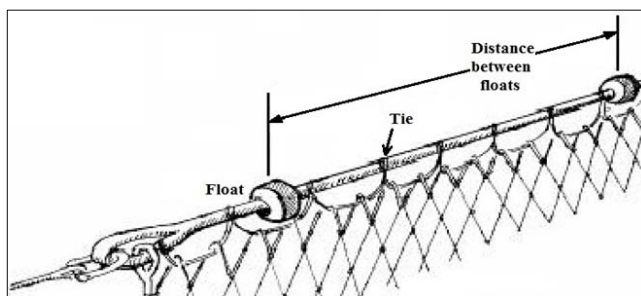
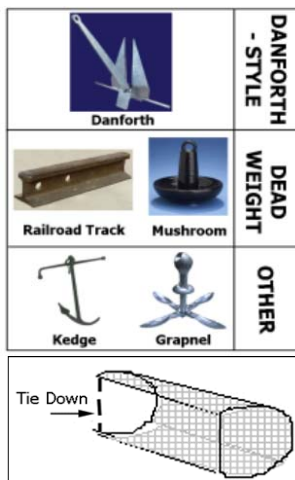
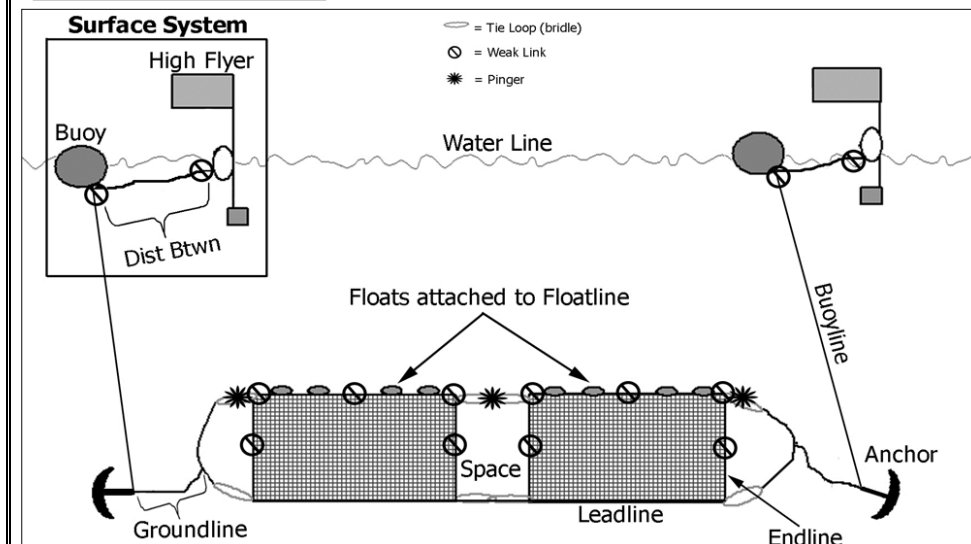
ANCHOR STYLES**ADDITIONAL COMMENTS**

Photo Credit: NOAA Fisheries Service Northeast Regional Office (Original image modified to include additional information).

WHOLE STRING LENGTH: Nearest foot
NOTE: If there is a space between two nets, **do not** include this distance in the net length.
TOTAL WEIGHT OF LEADLINE: Nearest pound
GROUNDLINE LENGTH: Nearest foot
GROUNDLINE DIAMETER: inches, 3 decimal places
ANCHORS TOTAL WEIGHT: Nearest pound
BUOYLINE LENGTH: Nearest foot
DIAMETER: inches, 3 decimal places
TIEDOWNS LENGTH: Nearest tenth of a foot
PANEL LENGTH: Nearest foot
NOTE: If there is a space between two nets, **do not** include this distance in the net length.

PANEL DEPTH (endline): Nearest tenth of a foot
LENGTH OF DROPLINES: Nearest foot
MESH SIZE: inches, 2 decimal places
FLOAT DIAMETER: Nearest tenth of an inch
DISTANCE BETWEEN FLOATS: Nearest foot
HANGING RATIO (H/R): Fractional ratio if the Captain knows the hanging ratio of the net, record it on the data sheet. If not, leave this line blank.
PANEL LEADLINE WEIGHT: Nearest pound
SPACES AVERAGE WIDTH: Nearest foot

**Southeast Fisheries Science Center
Gillnet Fishery Haul Log**

OBS/TRIP#: _____ VESSEL NAME: _____ VESSEL NUMBER: _____

LANDING DATE (mm/dd/yyyy): _____ INCIDENTAL TAKE: Y / N CATCH: Y / N

SET: _____ TARGET SPECIES: _____

GEAR CHARACTERISTICS

GEAR NUMBER: _____ GEAR CODE: _____

ENVIRONMENTAL (taken during set)

BOTTOM DEPTH (ft): _____ BOTTOM TYPE: _____ WIND DIRECTION (°): _____

WIND SPEED (kts): _____ WAVE HEIGHT (ft): _____ TDR USED: Y / N

SET/HAUL TABLE

SET/HAUL	DATE	TIME	LATITUDE								LONGITUDE								TEMP (°F)
SET BEGIN	/ /	:			°								°						
SET END	/ /	:			°								°						
HAUL BEGIN	/ /	:			°								°						
HAUL END	/ /	:			°								°						

DURING HAULBACK

SEABIRDS PRESENT: Y / N SPECIES: _____

MARINE MAMMALS PRESENT: Y / N SPECIES: _____

SEA TURTLES PRESENT: Y / N SPECIES: _____

NOTES:

OBS/TRIP #: _____ SET #: _____

ESTIMATED FORK LENGTHS – PANEL: _____ MESH SIZE: _____ in

[illegible]

ESTIMATED FORK LENGTHS – PANEL: _____ **MESH SIZE:** _____ in

[illegible]

[illegible]

TRIP SUMMARY INSTRUCTIONS

The trip summary is to be the cover sheet to your longline trip data when you send it in. It is filled out after the trip. If multiple trips are conducted on the same vessel, you must still have a trip summary for each trip, but the first trip summary can contain the majority of the information. Ex.: LHW001 trip summary has vessel information, invoice information, and notes on all three trips. LHW002 and LHW003 trip summaries just contain information specific to those trips (trip start and end date, sample and incidental take information, etc.)

TRIP ID: Record the three character observer/trip identifier. This should be used on all data forms and field notes for a single trip.
Example: LFH001.

VESSEL NAME: Record the name of the vessel. Care should be taken to record the correct spelling of the vessel's name. Do not use punctuation; hyphens, commas, or periods and data is entered in capital letters.
Example: MR ROGERS, SY KAI MAI, MISSYS DREAM

VESSEL NUMBER: Record the six digit U.S. Coast Guard Documentation Number. This should be displayed prominently on the vessel. If the vessel does not have a Coast Guard Number, record the state registration number and include the two letter state abbreviation prefix. This is not the same as the NMFS or state fishing permit number.
Example: USCG documentation number -234567 or State registration number - FL2345XX

INCIDENTAL TAKE Y / N: Indicate whether incidental take was caught (marine mammal, sea turtle, sawfish, sturgeon or sea bird).

IF YES WHICH HAUL NUMBERS: Indicate which haul numbers incidental take was caught.

BIOLOGICAL SAMPLES TAKEN: Indicate whether biological samples were taken during the trip.

DEPARTURE DATE: Record the month, day and year that the vessel left the dock and the trip began (mm/dd/yyyy).

DEPARTURE PORT: Record the city and the state (and specific dock location, if available) where the vessel left the dock and the trip began.

RETURN DATE: Record the month, day and year that the vessel returned to the dock and the trip ended (mm/dd/yyyy).

RETURN PORT: Record the city and the state (and specific dock location, if available) where the vessel returned to the dock and the trip ended.

SEA DAYS: Record the number of days spent at sea. One (1) sea day is tallied for any amount of time spent at sea, even if less than 24 hours.

NUMBER OF HAULS: Record the number of hauls done during the trip. Include all hauls, whether they were observed or not.

TARGET: Record the primary species being targeted for the trip, using one of the following three character code abbreviations. This information is obtained from the captain **prior** to fishing activity. If you know that a specific species is being targeted, please use that species specific code (ex. SSB = sandbar, YEG = yellowedge grouper).

SHX = shark

TIL = tilefish

GRP = grouper

MIX = multiple target species

TARGET SPECIFICATION: Record whether shark set was within the sandbar research fishery (**SRF**) or whether a grouper set was deep-water (**DEEP GRP**) or shallow-water (**SHALLOW GRP**).

WEIGH OUT LOCATION: Record the location that weigh out of catch from the trip was done. Name of fish house, dealer, and/or dock would be ideal.

COPY INCLUDED Y / N: Indicate whether a copy of the weigh out is included with the trip data. Every effort to obtain a copy of the weigh out form should be made. If weigh out occurs after the observer has left the area, the captain/owner/dealer/fish house can fax or mail a copy of the weigh out to the observer coordinator.

INVOICE: Indicate whether a copy of the reimbursement invoice is included with the trip data. **It is the observer's responsibility to give the form to the owner/captain after the trip.** The observer should fill out their Observer Trip ID, name, and the dates of the trip (sea days). **Be sure to get captain/owner SS# and signature!** The observer can turn in the reimbursement invoice with their data, or the owner/captain can mail or fax a copy to the observer coordinator. If you leave the invoice form with the owner/captain, include the **INVOICE INSTRUCTIONS** with the reimbursement invoice form. Multiple trips on the same vessel can be included in one invoice.

VESSEL ACCOMODATIONS: Record observations about the vessel and vessel accommodations including the presence or absence of a head, AC or heat, a bunk and bunk location, fresh water, shower, and infections and cleanliness of crew. These observations are for the observer and the observer program only, and will help with future coverage of the vessel.

COMMENTS: Record any comments about the trip, the vessel, the crew, or any observations about the catch. Please use the comments section liberally. If more space is required, use the back of the sheet and include "see back" on the front. We like comments; they will sometimes help avoid a phone call.

Invoice Instructions

This invoice will be used to obtain reimbursement for observer expenses incurred during a deployment aboard a U.S. commercial longline vessel. This invoice is to be filled out by the owner or captain of the vessel.

Filled out by Observer:

OBSERVER TRIP ID- Identification number of observer trip (ex. LHW001)

OBSERVER NAME-Name of observer

VESSEL NAME- name of the vessel that carried the observer

DATES OF TRIP- dates observer was aboard the vessel

MEAL EXPENSES- calculate food cost: (rate) X (days at sea) = subtotal. Observers' personal food purchases may be deducted from subtotal, if so, a copy of the receipt will be provided.

TOTAL COST- total cost incurred (food) for observer

Filled out by Vessel Owner or Captain:

CORPORATION NAME/OWNER NAME- person or entity whose name will appear on the check.

EIN or SSN- EIN (corporate number) or social security number (if check is going to an individual)

MAILING ADDRESS and PHONE- address and phone number of where the check should be sent

DATE- date of signature

SIGNATURE- signature of authorized person

ORGANIZATION CODE- office use only

TASK NUMBER- office use only

PLEASE RETURN TO: Simon Gulak
Southeast Fisheries Science Center
3500 Delwood Beach Road
Panama City, FL 32408
Fax #: 850-235-3559

IMPORTANT: Give invoice to observer or mail or fax to address above.

We need a SSN or EIN and original signatures or the check will not be processed.

Please write legibly with blue or black ink.

Allow 3-4 weeks for payment.

If you have any questions concerning this invoice or payment, please call at 850-234-6541 ext. 236

LOGLINE GEAR LOG INSTRUCTIONS

This log contains detailed descriptions about the gear fished. The gear log is the average of all hauls with that same gear configuration. Generally one gear log is used to describe gear within a single trip. Each gear log is numbered consecutively starting from gear number 1. Significant changes in gear configuration between hauls may result in different gear logs.

If information is not available or unknown for any question except a "NO/YES" question, record a dash (-) in the field.

DEFINITIONS

LOGLINE: 600-1200 lb test monofilament nylon mainline ("string") with attached branch lines, "gangions", which have baited hooks on the free end.

GANGION: A 100-1200 lb test nylon monofilament attached to a mainline by a snap. A gangion may vary in length and have up to two swivels, one at the snap and another some distance above the hook. Fishers may refer to this as a "leader" but we do not.

LEADER: A section of material that is different from the mono GANGION that is attached to the hook and the gangion. It may be mono or steel wire and may have a swivel at either end (hook end or gangion end). It reduces bite offs, makes hook replacement easier and helps to maintain the gangion length. Fishers may refer to this as a "tail".

HIGHFLYER: A marker made up of a pole set through a float. One end of the pole is weighted so that it floats upright with one end reaching higher above the water than most other floats. There may be a simple flag, a strobe, reflective tape, a radar reflector or any combination of such attached to the top of the pole to make it more visible. A highflyer is usually used to mark beginning and end of the mainline for bottom longlines, but can be used as reference points in the gear.

ADD. LINE WTS: Weights placed along the length of the mainline, sometimes associated with droplines or floats.

INSTRUCTIONS

In header:

GEAR ID: For lab use only. This number refers to the database. Please disregard.

On page:

OBS TRIP ID: Record the three character observer/trip identifier. This should be used on all data forms and field notes for a single trip.

Example: LFH001.

VESSEL NAME: Record the name of the vessel. Care should be taken to record the correct spelling of the vessel's name. Do not use punctuation; hyphens, commas, or periods and data is entered in capital letters.

Example: MR ROGERS, SY KAI MAI, MISSYS DREAM

VESSEL NUMBER: Record the six digit U.S. Coast Guard Documentation Number. This should be displayed prominently on the vessel. If the vessel does not have a Coast Guard Number, record the state registration number and include the two letter state abbreviation prefix. This is not the same as the NMFS or state fishing permit number.

Example: USCG documentation number -234567 or State registration number - FL2345XX

DATE LANDED: Record the month, day and year when the **vessel arrives back in port**. This may not be the same day fish are unloaded and sold.

Example: 01/01/2003

GEAR NUMBER: Record the consecutive number assigned to each gear configuration. Additional gear logs would be used in the following cases:

- >50% difference in the mainline length and/or number of hooks between hauls
- change in fishing method (bottom longline to bandit)
- change in the target species (SHX to GRP)

Example: The first two hauls use 18.0 circle hooks to target SHX described by gear number 1. The next two hauls use 12.0 circle hooks to target reef fish. A second gear log would then be completed and numbered gear number 2. The last haul uses a combination of these hooks targeting MIX (both SHX and REF). A third gear log would be completed and numbered gear number 3. Record the appropriate gear number in field (GEAR NUMBER) on each of the **LONGLINE HAUL LOG** sheets. Hauls 1-2=1 and Hauls 3-4=2 and Haul 5=3. However if two similar hook sizes are used to target same species NO new gear log is needed (i.e. 16.0 circle and 12.0 J hooks targeting SHX).

OF HAULS: Record the number of hauls for that Observer/Trip Number for that string.

AVG. # HOOKS: Record the number of hooks set. **This is an average of all hauls with the same gear configuration.**

TOTAL # HOOKS (trip start): Record the total number of hooks onboard at the start of the trip. This is not an addition or average of all hauls, but a count of the assembled gangions with hooks that might be used to fish. This includes all hooks in boxes.

COLOR AND MATERIAL CODES:

Color codes (01-09) are used to describe mainline and gangion colors:

- | | |
|---------|-------------------------------------|
| 1 CLEAR | 6 BLUE |
| 2 WHITE | 7 MULTI (for any mixture of colors) |
| 3 PINK | 8 RED |
| 4 BLACK | 9 OTHER (describe in comments) |
| 5 GREEN | |

Material codes (01-04) are used to describe the types of lines used for mainline, gangions, and leaders:

- 1 NYLON
- 2 COTTON
- 3 STEEL WIRE
- 4 OTHER

MAINLINE:

COLOR: Record the color of the main line, by writing the numerical code for that color (1-9). If more than one color is present assign the color a code of **7** (multi). Steel mainlines are given code **9** (other). Please describe all other colors in COMMENTS field.

TEST: Record the pound test or dry breaking strength of the main line. This information can be obtained from the captain and/or verified from a manufacturer label. General ranges found are 600-1200 lbs.

MATERIAL: Record the material code (1-4). Please describe other materials in COMMENTS field.

DIAMETER: Record to the nearest tenth of a millimeter the diameter of the mainline. Use a pair of calipers or submit a labeled sample piece with your data. General ranges found are 3.0-4.2 mm.

STRANDS: Record the number of strands of material that make up the mainline. Nylon (monofilament) should be 1 strand. Steel wire is usually 7x7, so it should be 49 strands.

AVG. LENGTH: Record the average length of the mainline in nautical miles (nm). This is an average of all hauls with the same gear configuration.

GANGIONS:

COLOR: Record the color code. Please record any “9” color in comments.

TEST: Record the pound test or dry breaking strength of the gangions. General ranges found are 300-1200 lbs.

MATERIAL: Record the gangion material code. Indicate “9” material in the comments field.

DIAMETER: Record to the nearest tenth of a millimeter the diameter of the gangions. General ranges found are 1.8-4.2 mm. It is common for the diameter of steel wire to be provided to you in inches by the captain.

SWIVELS PER GANGION: Indicate whether swivels are used on gangions by checking the box if yes and record the amount used per gangion in the box. One is generally located at the snap and a second swivel can be located some distance above the hook between the gangion and the leader or attached to the hook.

AVG. LENGTH: Record to the **nearest foot** the average of the gangion lengths. Gangion length should not include the leader length. This is an average of all hauls with the same gear configuration.

AVG #: Record the number of gangions for each length used. This is an **average of all hauls with the same gear configuration.**

DISTANCE BETWEEN GANGIONS: Record the distance, in **whole feet**, between gangions. This is an **average of all hauls with the same gear configuration.** Calculation is required to estimate the distance between gangions. Convert average mainline length from nautical miles to feet by multiplying average mainline length by **6080 feet**.

Gangion Distance = Avg. Mainline Length (ft) / (Avg # Hooks +1)

LEADERS USED: Indicate whether leaders are used between the gangion and the hook by checking the box if yes.

LEADER LENGTH: Record the length of the leader to nearest inch. This is an average of all hauls with the same gear configuration.

LEADER TEST: Record the pound test or dry breaking strength of the leader. Generally this is the same as the gangion.

LEADER MATERIAL: Record the material code of the leader. If ‘4’ please indicate in the comments field.

LINE ADDITIONS AND OTHER GEARS:

OTHER LINE ADDITIONS: Indicate whether a line addition was used, by checking the box if yes and record the average number per haul. Indicate “Other” type in the comments section.

DROPLINES: Indicate whether droplines were used by checking the box if yes and record the average number per haul. Droplines are generally attached to the mainline as reference points and have bullets or daubs at the surface.

DROPLINE AVG LENGTH: Average length of all droplines used (in feet)

DISTANCE BETWEEN DROPLINES: Record the distance, in **whole feet**, between droplines. This is an **average of all hauls with the same gear configuration**. Calculation is required to estimate the distance between droplines. Convert distance from nautical miles to feet by multiplying by **6080 feet**.

Dropline Distance = Avg. Mainline Length (ft) / (Avg # Droplines +1)

HOOKS

BRAND: Record the hook brand name in all capital letters and one word. You can account for up to six different hooks. This information can be obtained from the captain and/or verified from a manufacturer label or Hook Guide.
Example: MUSTAD, EAGLECLAW, LGPN (for Lindgren/Pitman), HILINER

TYPE: Write in C for circle, J for J-hook, T for treble or L for lure. You can account for up to six different hooks.

MODEL: Record the hook model or pattern number in one word. You can account for up to three different hooks. For Lindgren/Pitman (LGPN) black carbon circle hooks, use the code LPCIRBL

SIZE: Record the hook size. You can account for up to six different hooks. This information can be obtained from the captain and/or verified from a manufacturer label or Hook Guide.
Example: 9/0 = nine aught

OFFSET: Offset refers to the amount of deviation in the plane of the hook point relative to that of the shank. If yes, tick the box. Hooks can be offset manually (by the fishermen) or by the manufacturer.

DEGREES OFFSET: Record the degrees offset. This can be obtained from the label or the captain. The standard is 10°.

VESSEL DIAGRAM

Please indicate the position of longline reels and hauling station on the vessel diagram.

Suggested icons:

☒ Bandit Reel



Longline Reel

← Hauling station

COMMENTS: Please use the comments section liberally. If more space is required, use the back of the sheet and include "see back" on the front. Feel free to make drawings or diagrams if the gear setup is unusual. We like comments; they will sometimes help avoid a phone call.

HOOKS USED IN LONGLINE FISHING

A fish hook is a seemingly simple thing but it does have discernable parts. The Mustad website (<http://www.mustad.no/about/hooks/index.php>) describes a typical hook as having an eye, shank, bend, bite/throat, a point and barb, and a gape (sometimes called gap). Four different dimensions are given in Figure 1: total length, front length, gape, and bite/throat. According to Mustad, the most important of these are the size of the gape and the size of the bite/throat. Nothing, however, in the Mustad hook size numbering system readily appears to correspond to these dimensions. In fact, they report there is no uniform system of hook measurements.

FISH HOOK NUMBERING SYSTEMS

Mustad hooks, as well as most hooks manufactured in Europe or the United States, come in a range of sizes from 22 (the smallest) to 20/0 (the largest).

Steve Beverly
Fisheries Development Officer
SPC, Noumea
New Caledonia
(SteveB@spc.int)

Small hooks are numbered in a descending order so a #21 is bigger than a #22, a #20 is bigger than a #21, and so on right up to a #1 which is the biggest small hook. Large hooks are numbered in an ascending order starting with the smallest, 1/0, and going to the largest, 20/0. Not every hook style is available in the full range of sizes from 22 to 20/0, however. Furthermore, there is little consistency in methods for applying this ranking system in the profusion of fishing gear catalogues. A 10/0 hook made by one company may not correspond in actual size to a 10/0 hook made by another. Generally, the 22 to 20/0 system is just a ranking system and has

little to do with actual hook dimensions. There are exceptions to this, however (see discussion below on circle hooks).

HOOKS USED IN PELAGIC LONGLINE

Japan tuna hooks

Basically there are three kinds of hooks used in pelagic longline fishing: Japan tuna hooks, circle hooks, and J hooks (Beverly et al. 2003). Japan tuna hooks (Fig. 2) have been the most popular for years, especially with tuna longliners. They come in a variety of sizes but are usually described by a Japanese measurement called sun, which is about 3.3 cm (OFCF 1993) and is used to measure the length of the hook. A 3.4 sun hook, for example, is 3.4 sun x 3.3 cm/sun long. In other words, a 3.4 sun hook is 11.2 cm long. This is the entire length of the wire making up the hook from the eye to the tip of the point (not to be confused with total length in Fig. 1). This measurement says nothing about the shape of the hook or the size of the bite/throat or gape, however. The most popu-

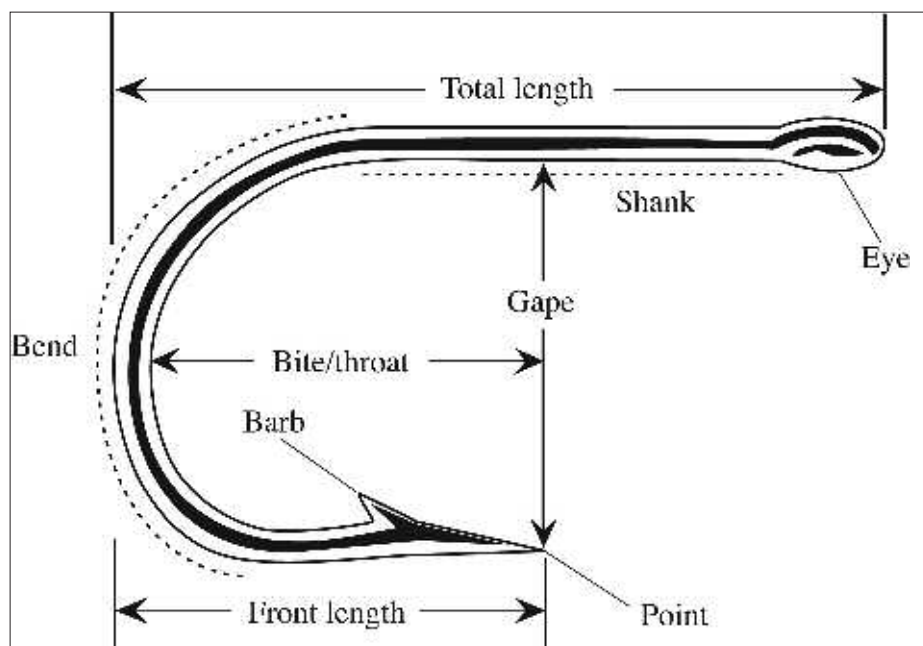


Figure 1: Hook anatomy from Mustad website
(<http://www.mustad.no/about/hooks/index.php>)

lar sizes of Japan tuna hooks for longlining are 3.4, 3.6, and 3.8 sun. Japan tuna hooks come either with a ring or without a ring in the eye. The most popular hook for tuna longlining is a 3.6 sun stainless steel Japan tuna hook with ring.

Circle hooks

Circle hooks (Fig. 3) are also called G hooks or tuna circle hooks, and are generally measured the same way that Japan tuna hooks are measured. Japanese made circle hooks used in longline fishing generally come in sizes ranging from 4.2 sun to 5.5 sun. Again, the number refers to the entire length of wire making up the hook from the eye to the point, just as with the Japan tuna hook. Most Western made circle hooks are numbered and measured in a similar way. The difference is that the numbers refer to centimetres, not sun. Thus, an 18/0 circle hook measures 18 cm from the eye to the tip of the point. This is equal to a 5.5 sun Japanese made circle hook (conversely, a 3.4 sun Japan tuna hook would be an 11/0 in the Western system). Some manufacturers, however, use a completely different numbering system for circle hooks. Tankichi and Maruto brand hooks, for example, are numbered from 28 to 44 (POP 2004). Table 1 compares Western and Japanese circle hook sizes. Circle hooks are commonly used for fisheries other than pelagic longline, such as deep water snapper fishing. They are popular because of their rotating effect, which makes them self setting. In fact, circle hooks are also called rotat-

ing hooks. When a fish bites and applies pressure, the circle hook rotates and sets itself. Sizes for circle hooks generally range from 8/0 to 16/0 but recently, larger sizes such as 18/0 and even 20/0 have been available. The most popular sizes for longline fishing range from 14/0 to 18/0. Circle hooks do not usually come with rings. A good discussion of circle hooks can be found in ASMFC (2003).

J hooks

J hooks are very similar to big game trolling hooks used to catch marlin and other big game fish species (Fig. 4). J hooks come in sizes ranging from 1/0 to 12/0, and are usually associated with longline fishing for swordfish. The most common sizes of J hooks used for swordfish are 8/0 and 9/0. A 9/0 J hook measures 15 cm from the eye to the point so it is not easy

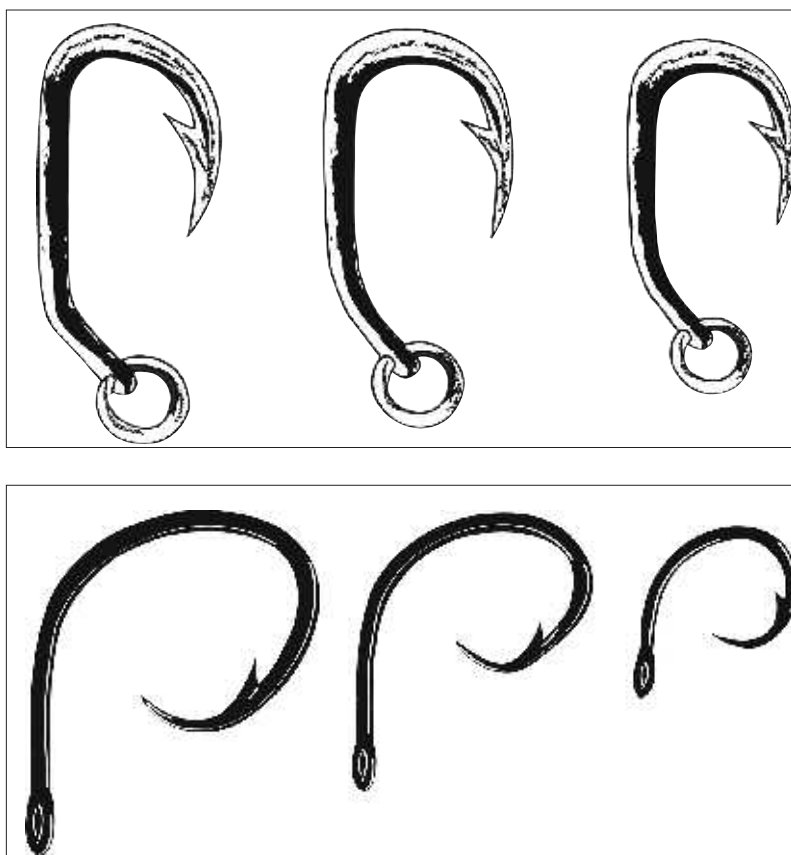


Figure 2 (top): Japan tuna hooks with ring from Hi-fishing Tackle Company website (http://www.hi-fishing.com/tuna_fr.htm). Hooks not drawn to scale

Figure 3 (bottom): Circle hooks from Mustad website (<http://www.mustad.no/abouthooks/index.php>). Hooks not drawn to scale

Table 1. Comparison of Western circle hook sizes with Japanese circle hook sizes.

Western circle hook (cm)	Japanese circle hook (sun)	Tankichi and Maruto
12/0	3.6	28
14/0	4.2	36
16/0	4.8	44
18/0	5.5	na

to compare numbers for J hooks with other hook designs. A 9/0 J hook, in fact, is similar in size to a 16/0 circle hook. Swordfish fishermen prefer J hooks because swordfish have a soft lower jaw. The jaw is easily torn, causing loss of the fish. J hooks tend to hold better than other hooks in a swordfish mouth (Beverly et al. 2003). They also have a better chance of hooking the hard bill of the swordfish because of their straight shape. The main feature of a J hook that makes it different from Japan hooks or circle hooks is that the barbed point is almost parallel to the shank of the hook. With Japan tuna hooks, the shank is bent towards the tip of the hook while circle hooks have a point that is bent until it almost points directly at the shank at a 90° angle. What this means is, of the three hook designs, the J hook has the largest gape. This could be one of the reasons that J hooks are implicated in higher turtle bycatch rates than the other hook designs.

HOOKS AND BYCATCH

Hook types in longline fisheries have received attention recently because of the problem of sea turtle bycatch. It has been found that using 18/0 circle hooks with mackerel bait can reduce the bycatch of turtles while maintaining the catch of tunas and swordfish (Watson et al. 2005). Notwithstanding all that has been said about hook parts and dimensions, however, the most important hook dimension in regards to turtle bycatch is probably none of the dimensions listed in Figure 1. The US National Oceanic and Atmospheric Administration has determined, in a study using captive loggerhead turtles, that the overall (narrowest) width of the hook is the most important measurement because it is what determines whether or not a turtle can swallow the baited hook

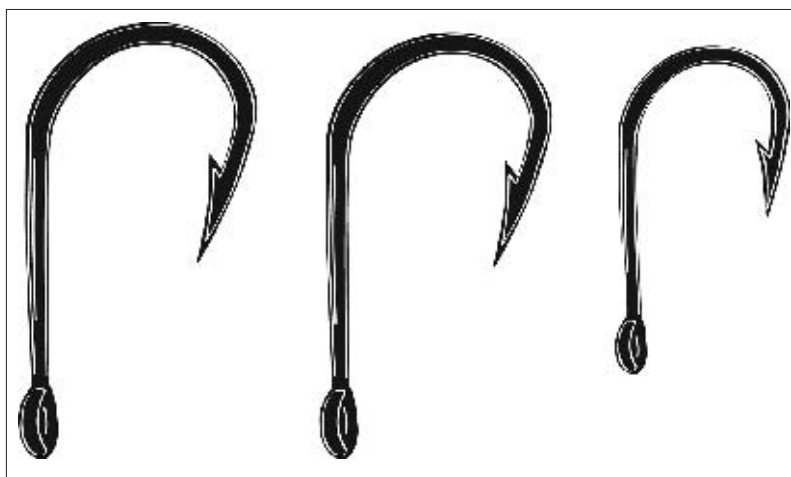


Figure 4: J hooks from Mustad website
(<http://www.mustad.no/abouthooks/index.php>).
Hooks not drawn to scale

(Watson et al. 2003). The study concluded that using hooks larger than 51 mm in width has the potential to significantly reduce post-capture mortality of loggerheads incidentally captured on longlines. A 16/0 circle hook, for example, has a width of 51 mm while a 9/0 J hook (which is similar in size to 16/0 circle hook) has a width of only 41 mm. Just based on this one reference point, the 16/0 circle hook would be preferable to the 9/0 J hook for reducing post-capture mortality of sea turtles.

Another confounding factor with hooks is the fact that they can be either offset or non-offset. With non-offset hooks (straight), the point lies in the same plane as the shank of the hook. With offset hooks, the point is bent away from the plane of the shank by anywhere from 5–25°. If the point is offset to the left, the hook is kirbed. If the point is offset to the right, the hook is reversed (Fig. 5). Japan tuna hooks, for example, typically have a 10–20° (kirbed) offset. Circle hooks and J hooks, however, can be either offset or non-offset. Both offset and non-offset hooks

have been tested in regards to turtle bycatch rates in pelagic longline fishing, and some issues have been raised. There are implications for acceptability by fishermen. For example, fishermen found it difficult to thread bait on non-offset circle hooks in one study (Watson et al. 2005). There are also possible implications with respect to the effects on target species and bycatch species catch rates, and on post-capture injury and mortality rates of turtles. Another complication is that before about 1995, longline hooks were available only in galvanised high carbon steel. Now they are available in stainless steel as

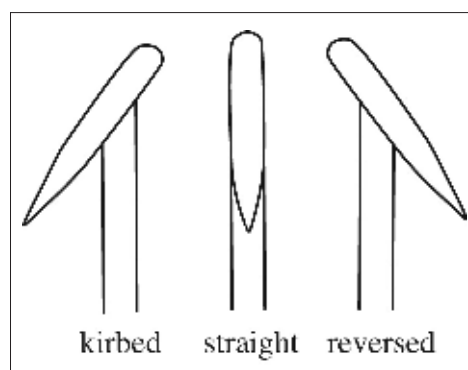


Figure 5: Offset (kirbed and reversed) and non-offset hook points, from In-Fisherman website
(http://www.in-fisherman.com/magazine/exclusives/IFM0502_AboutHooks/)

well. This means that they last longer, especially when coming into contact during storage with other fishing gear such as the stainless steel snaps used on the branchlines (with two similar metals there is no galvanic reaction and, thus, less corrosion); but this also has implications for bycatch post-capture mortality. Stainless steel may last longer than galvanised steel in a turtle's mouth or esophagus. In fact, stainless steel hooks are not allowed in the US Atlantic swordfish fishery (Federal Register 2004).

Further research is being carried out in Hawaii and in Australia, comparing circle hooks with J hooks and Japan tuna hooks in tuna and swordfish longline fisheries. It well may be that this inexpensive and low tech solution to bycatch in the longline fisheries will be adapted on a wider scale. Any solution to bycatch in fisheries has to fulfill these simple criteria: be simple to implement, be inexpensive, contribute to lower bycatch rates, increase or not change target species catch rates, and be sustainable. So far the circle hook has met or surpassed all of

these criteria, at least in swordfish fisheries. The Japan tuna hook probably still has a place in deep-set tuna longline fisheries and the J hook probably still has a place in troll fisheries for large tuna and other game fish such as marlin. The J hook, however, has most likely seen its last days as a longline hook."

REFERENCES

Atlantic States Marine Fisheries Commission. 2003. Circle hook definition and research issues. Special Report No. 77 of the Atlantic States Marine Fisheries Commission.

Beverly S., Chapman L. and Sokimi W. 2003. Horizontal longline fishing methods and techniques: A manual for fishermen. Secretariat of the Pacific Community, New Caledonia.

Federal Register. 2004. Atlantic Highly Migratory Species (HMS): Pelagic Longline Fishery. Federal Register. Vol. 69, No. 128. 50 CFR Parts 223 and 635.

Overseas Fishery Cooperation Foundation. 1993. Tuna longline fishing. Overseas fishery cooperation foundation fisheries training Cooperative Project in Federated States of Micronesia.

Pacific Ocean Producers. 2004. Pacific Ocean Producers Commercial and Longline Fishing Catalog. Honolulu, Hawaii.

Watson J.W., Hataway B.D. and Bergman C.E. 2003. Effect of hook size on ingestion of hooks by loggerhead sea turtles. NOAA Fisheries Southeast Fisheries Science Center. Reference Paper for the International Tuna Fishers' Conference on Responsible Fisheries and Third International Fishers' Forum. Yokohama, Japan.

Watson J.W., Epperly S.P. Shah A.K. and Foster D.G. 2005. Fishing methods to reduce sea turtle mortality associated with pelagic longlines. Canadian Journal of Fisheries and Aquatic Sciences 62:965-981







COMMERCIAL HOOKS

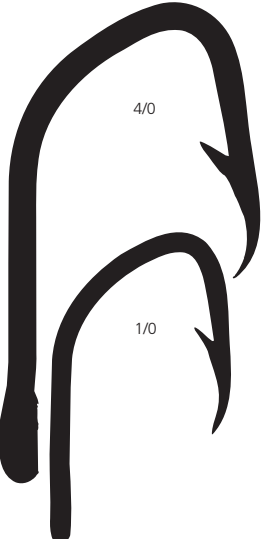
The rigors of ocean fishing demand special tools. In countries all over the world, generations of dependable duty have helped Mustad Salt Water Hooks mean real value in any language.

When the battle starts, it's good to be on line with Mustad.

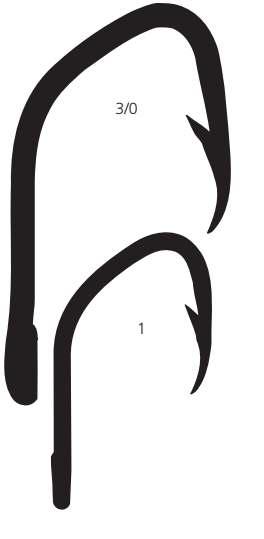
Mustad Salt Water Hooks are formed from strong high carbon steel, then specially tempered to bend without breaking – all to endure when others fail.




NEW REF.	OLD REF.		
413A-DT	413AD		



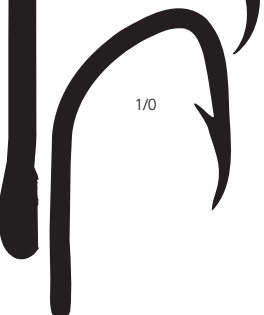
4/0



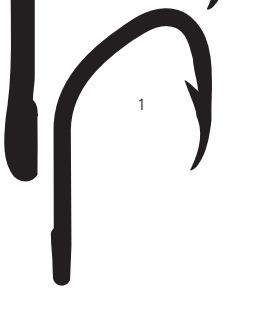
3/0




2/0




1/0




1





2




413A-DT	Pack code	Size
	116	4/0,3/0,2/0,1/0,1,2

Hollow Point Mustad Tuna.


NEW REF.	OLD REF.		
455-DT	455D		




14




12




11



10



455-DT	Pack code	Size
	116	10,11,12,14

Fish Spears.

Size	Wire length mm	Wire diameter mm
10	133	3,65
11	127	5,38
12	127	4,88
14	127	4,05

NEW REF.	OLD REF.		
701A-DT	701AD		

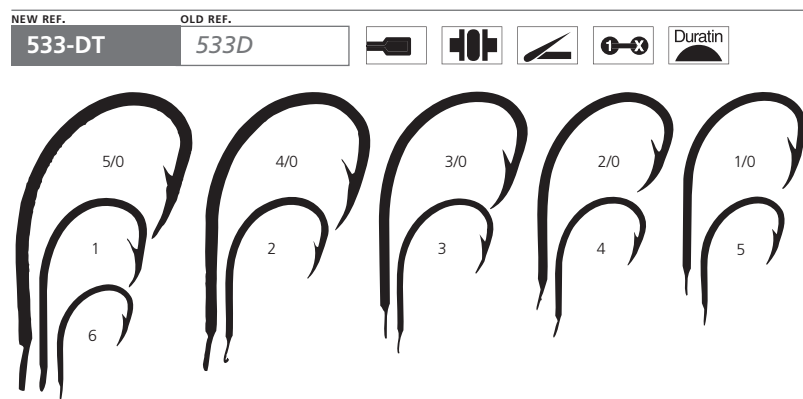


4



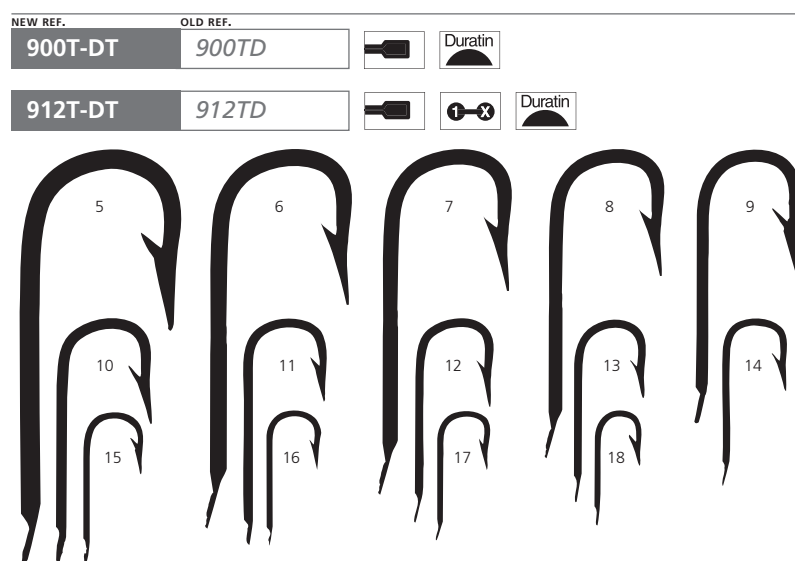
701A-DT	Pack code	Size
	116	4

Round bend, with knob.



533-DT	Pack code	Size
	116	7/0, 5/0, 4/0, 3/0, 2/0, 1/0, 1, 2, 3, 4, 5, 6

Hollow Point, extra strong.

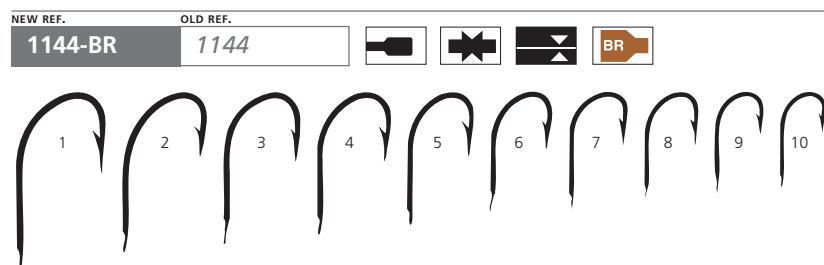


900T-DT	Pack code	Size
	116	7, 8, 9, 10, 11, 12, 13, 14, 15, 16



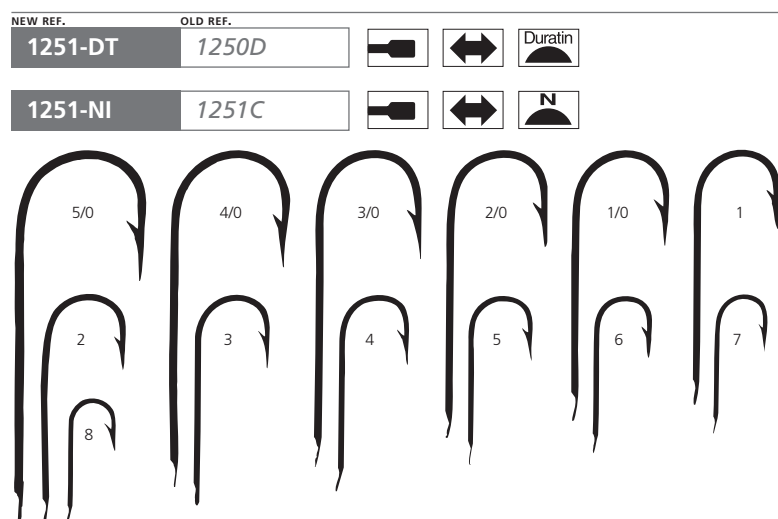
912T-DT	Pack code	Size
	116	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18

Round Bend Sea Hooks.



1144-BR	Pack code	Size
	116	1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Hollow Point Kirby Limerick.


















1251-DT	Pack code	Size
	116	5/0, 4/0, 3/0, 2/0, 1/0






















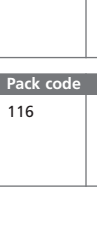
1251-NI	Pack code	Size
	116	1/0, 1, 2, 3, 4, 5, 6, 7, 8










Hollow Point Kendal Round.











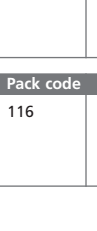
NEW REF.	OLD REF.			
1252-DT	1252D			
1252-NI	1253A			







								
---	---	---	---	---	---	---	---	---










NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











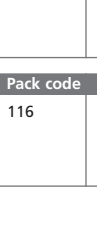
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











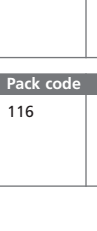
NEW REF.	OLD REF.			
1252-DT	1252D			
1252-NI	1253A			










								
---	---	---	---	---	---	---	---	---











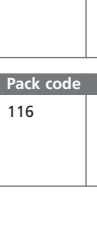
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











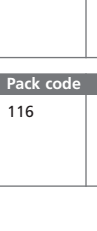
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











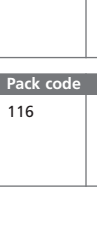
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











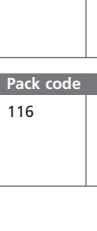
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











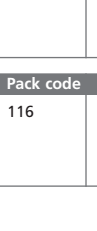
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











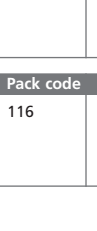
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











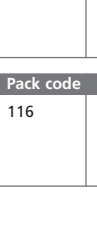
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











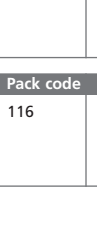
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











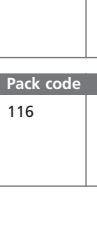
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			










										
---	---	---	---	---	---	---	---	---	---	---











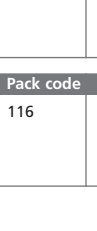
NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			









										
---	---	---	---	---	---	---	---	---	---	---

NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			

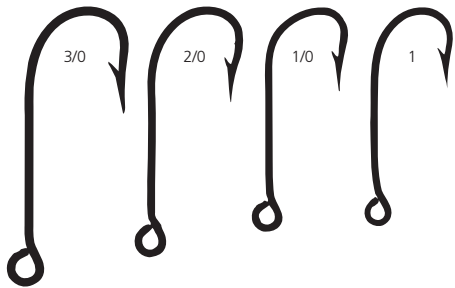
										
---	---	---	---	---	---	---	---	---	---	---

NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			

										
---	---	---	---	---	---	---	---	---	---	---

NEW REF.	OLD REF.			
1521-BU	1521			
1522-BU	1522			
1521-DT	1523D			

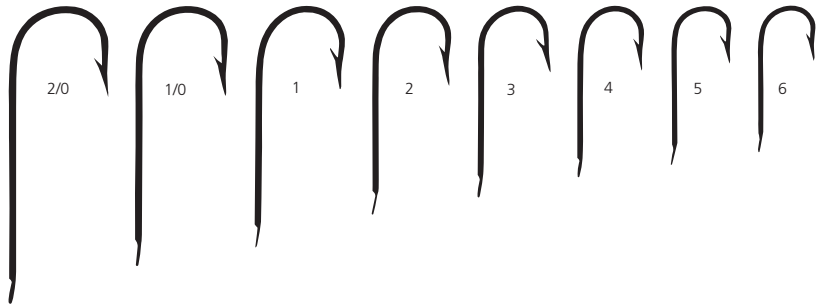
NEW REF.	OLD REF.
1536-DT	1536DT



1536-DT	Pack code	Size
	116	3/0,2/0,1/0,1

Best Kirby.

NEW REF.	OLD REF.
1799-DT	1799D



1799-DT	Pack code	Size
	116	2/0, 1/0, 1, 2, 3, 4, 5, 6

Filed Point Kendal Round.

NEW REF.	OLD REF.
1979-DT	1979D



1979-DT	Pack code	Size
	119	7

Eel hook.

NEW REF.	OLD REF.
2286-BL	2286



NEW REF.	OLD REF.
2286-DT	2286TD

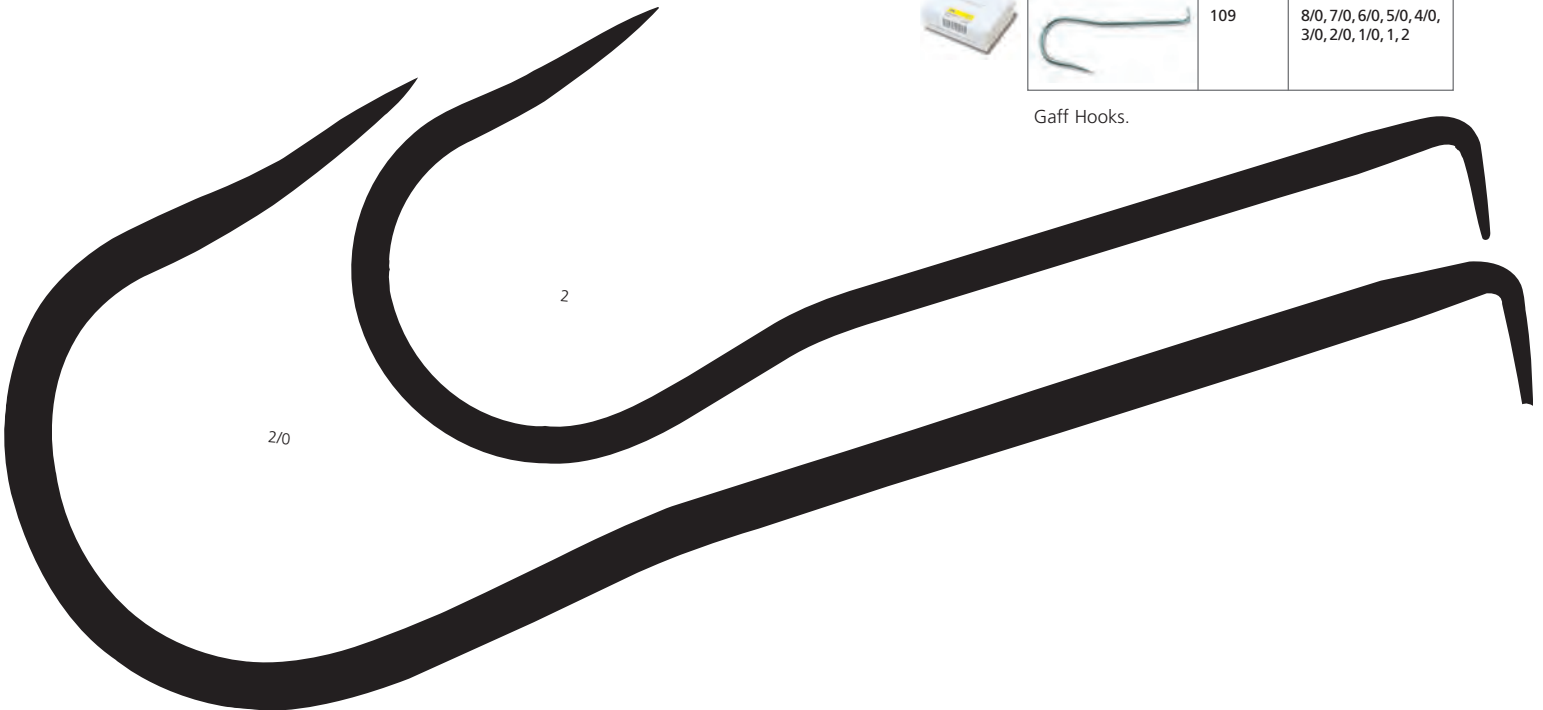


















2286-BL	Pack code	Size
	109	2/0,1/0,1, 2











2286-DT	Pack code	Size
	109	8/0, 7/0, 6/0, 5/0, 4/0, 3/0, 2/0, 1/0, 1, 2

Gaff Hooks.



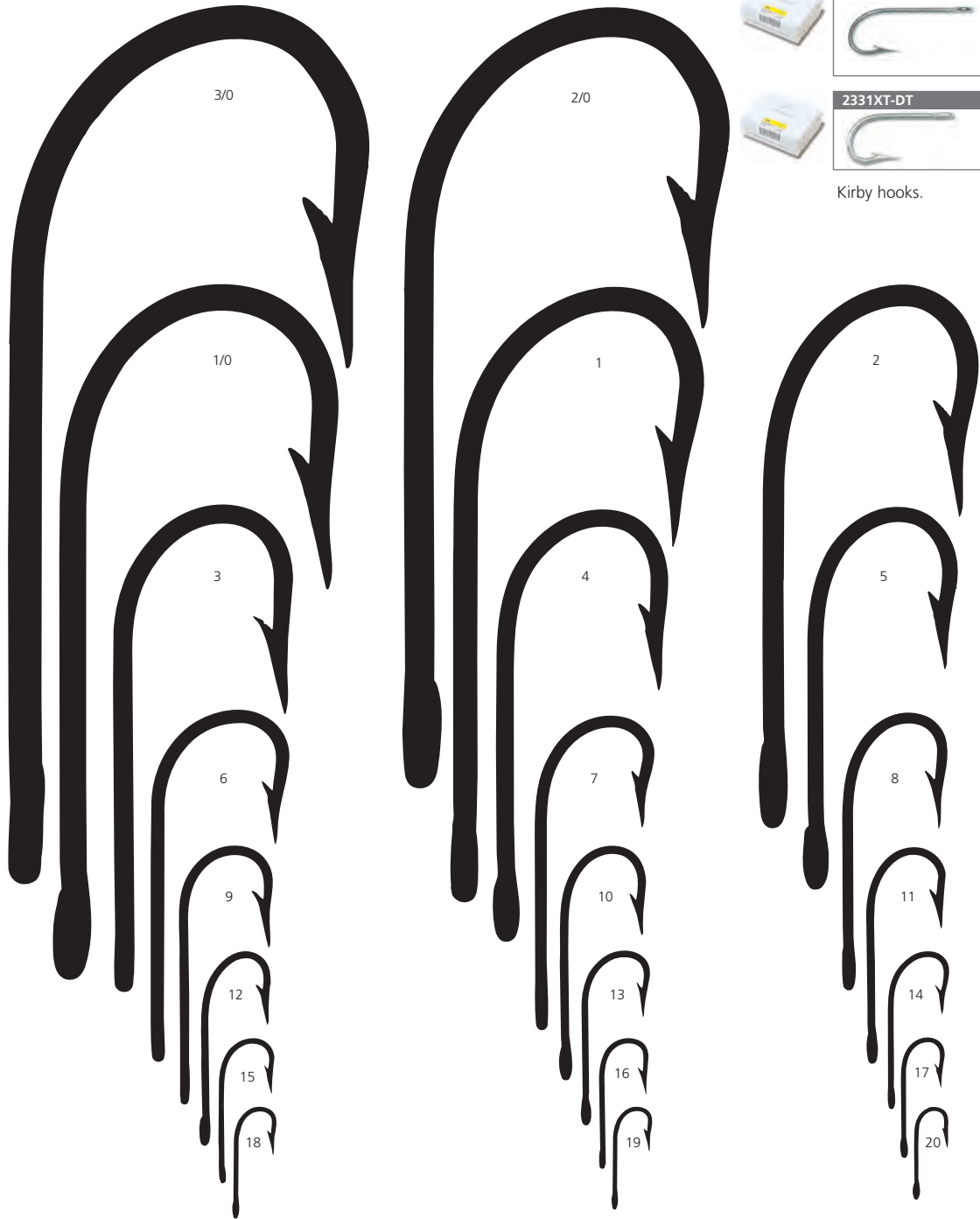
NEW REF.	OLD REF.		
2315-BU	2305		
2315-DT	2315DT		
2315S-SS	2315S		
2306-DT	2316DT		
2316SS-SS	2316SS		
2335-BU	2325		
2335-DT	2335DT		
2339-DT	2339D		

















	2315-BU	Pack code	Size
		116	8,9,10,11,12,13,14,15,16,17,18,20
	2315-DT	Pack code	Size
		114 116	1 2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20
	2315S-SS	Pack code	Size
		314	7,8,9,10,11,12,13,14,15,16,17
	2306-DT	Pack code	Size
		116	6,7,8,9,10,11,12,13,14,15,16
	2316SS-SS	Pack code	Size
		314	8,9,10,11,12,13,14,15,16
	2335-BU	Pack code	Size
		116	12,13,14,15,16,18,20
	2335-DT	Pack code	Size
		114 116	4/0,3/0,2/0,1/0,1 2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20
	2339-DT	Pack code	Size
		116	4,5,6,7,8,9,10,11,12,13,14

Round Bend Sea Hooks.



NEW REF.	OLD REF.			
2310-DT	2310DT			
2330-BU	2320			
2330-DT	2330DT			
2331XT-DT	2331XT			






	<table><tr><th>2310-DT</th><th>Pack code</th><th>Size</th></tr><tr><td></td><td>116</td><td>2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20</td></tr></table>	2310-DT	Pack code	Size		116	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20			
2310-DT	Pack code	Size								
	116	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20								
	<table><tr><th>2330-BU</th><th>Pack code</th><th>Size</th></tr><tr><td></td><td>116</td><td>3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,20</td></tr><tr><td></td><td>114</td><td>1,2</td></tr></table>	2330-BU	Pack code	Size		116	3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,20		114	1,2
2330-BU	Pack code	Size								
	116	3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,20								
	114	1,2								
	<table><tr><th>2330-DT</th><th>Pack code</th><th>Size</th></tr><tr><td></td><td>114</td><td>3/0, 2/0, 1/0, 1, 2</td></tr><tr><td></td><td>116</td><td>3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,20</td></tr></table>	2330-DT	Pack code	Size		114	3/0, 2/0, 1/0, 1, 2		116	3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,20
2330-DT	Pack code	Size								
	114	3/0, 2/0, 1/0, 1, 2								
	116	3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,20								
	<table><tr><th>2331XT-DT</th><th>Pack code</th><th>Size</th></tr><tr><td></td><td>116</td><td>2,3</td></tr></table>	2331XT-DT	Pack code	Size		116	2,3			
2331XT-DT	Pack code	Size								
	116	2,3								


Kirby hooks.

NEW REF.
2369B-DT

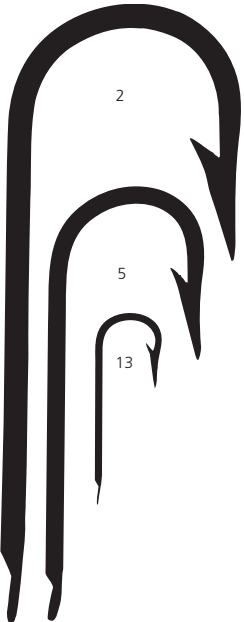
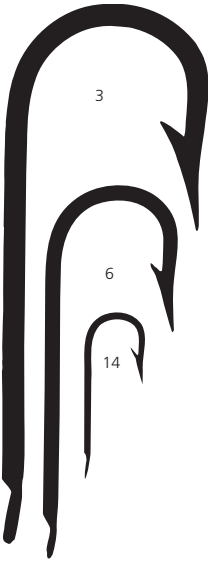








OLD REF.
2369BD












2369B-DT	Pack code	Size
	116	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18




General purpose sea hook.





















NEW REF.
4480-DT

OLD REF.
4480DT













4480-DT	Pack code	Size
	109	19/0,18/0,16/0,15/0,14/0,13/0,12/0,11/0,10/0

NEW REF.
4483-DT


OLD REF.
4483DT



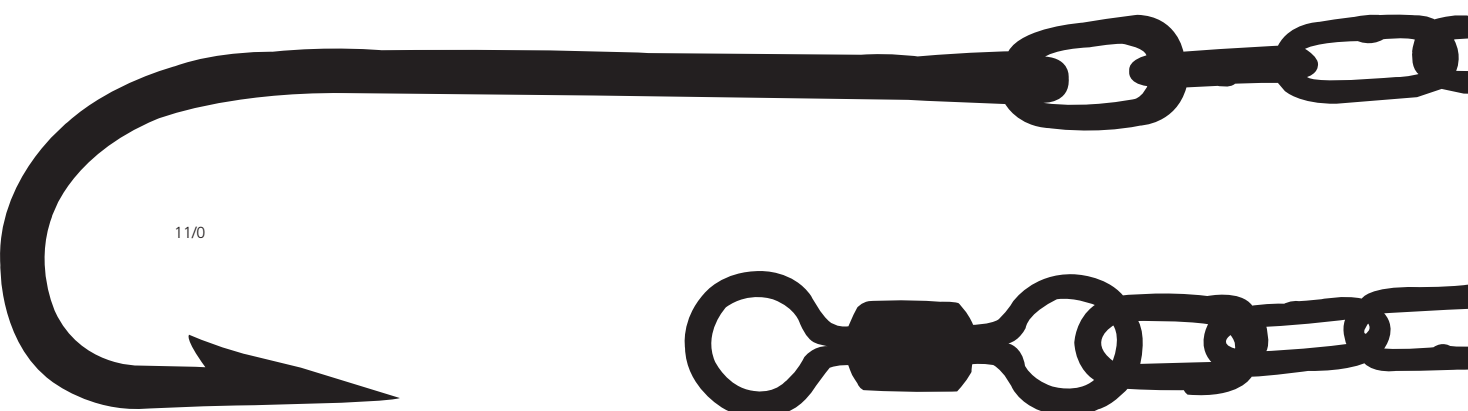
4483-DT	Pack code	Size
	109	12/0,11/0,10/0


Shark hook.



No.:	Diam.: (mm)	Gap open.: (mm)	Length: (mm)	MBTest: (kg)
19/0	13.00	152.00	360.00	567.00
18/0	11.00	127.00	320.00	467.00
16/0	9.00	102.00	260.00	285.00
15/0	8.00	89.00	235.00	427.00
14/0	7.60	76.00	210.00	400.00
13/0	7.00	64.00	180.00	400.00
12/0	6.40	51.00	160.00	390.00
11/0	5.88	38.00	140.00	400.00
10/0	4.88	25.50	120.00	315.00

This table shows the correct figures, but the hooks shown may not correspond accurately to the actual sizes of the hooks.

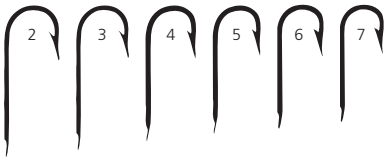




NEW REF.	OLD REF.
6447-DT	6447D



Duratin



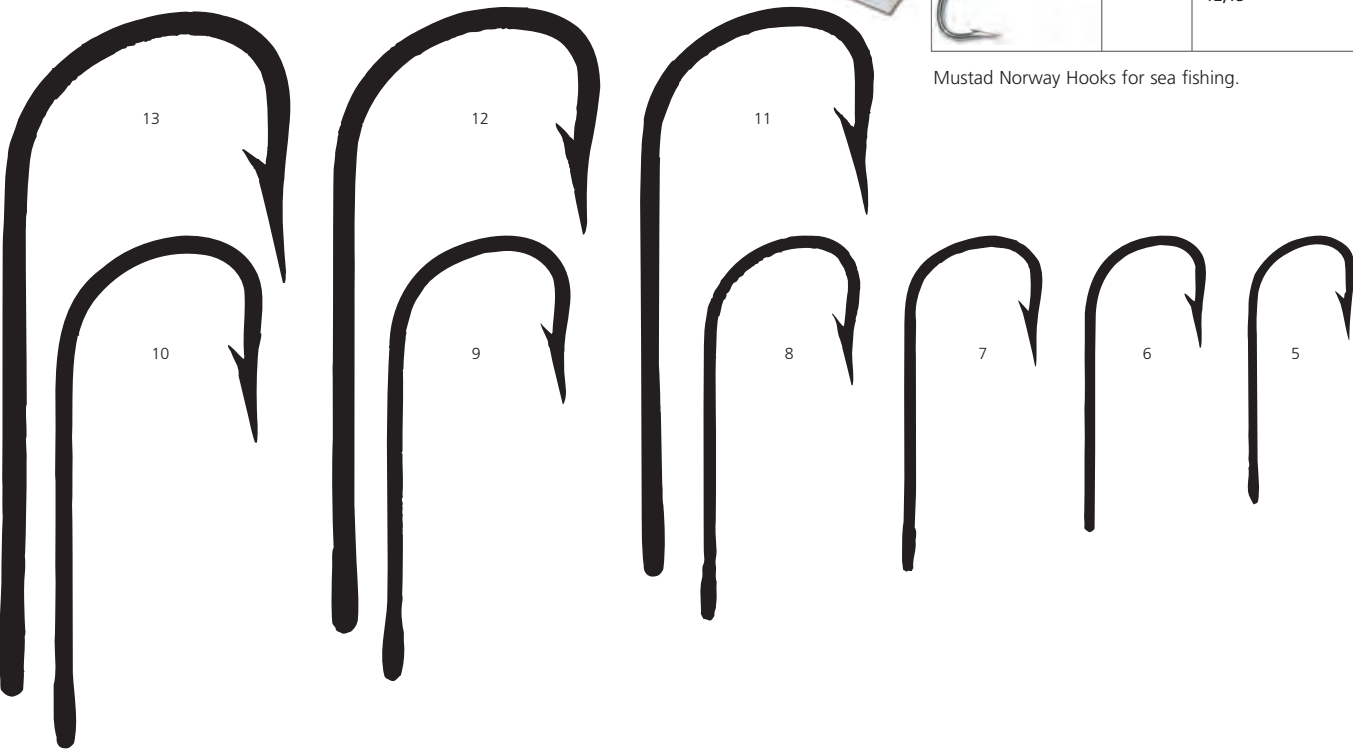
6447-DT	Pack code	Size
	116	2,3,4,5,6,7

Round Bend River Hooks.

NEW REF.	OLD REF.
7255-DT	7255D



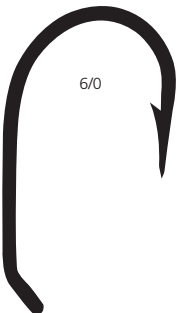
Duratin



7255-DT	Pack code	Size
	116	5,6,7,8,9,10,11,12,13

Mustad Norway Hooks for sea fishing.

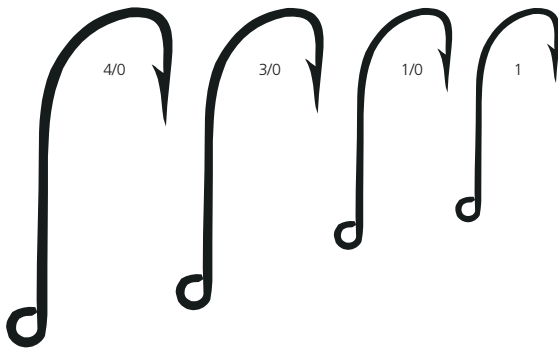
NEW REF.	OLD REF.
9087S-SS	9087S



9087S-SS	Pack code	Size
	116	6/0

Viking stainless, small ball eye.

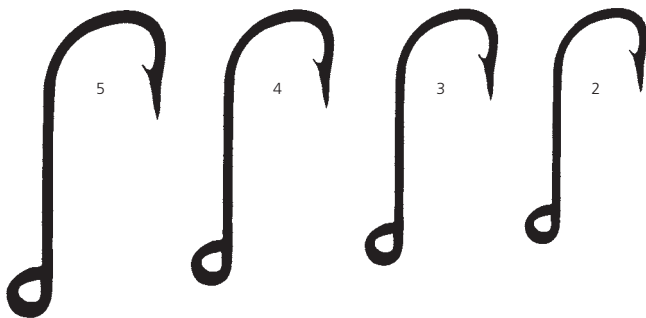
NEW REF.	OLD REF.
31103-SS	31103



31103-SS	Pack code	Size
	116	4/0,3/0,1/0,1

Superior Limerick hook.

NEW REF.	OLD REF.
34958-SS	34958



34958-SS	Pack code	Size
	116	5,4,3,2

Superior Stainless hook.

NEW REF.	OLD REF.
39960ST-DT	39960D



NEW REF.	OLD REF.
39965-DT	39965D



NEW REF.	OLD REF.
39966-DT	39966DT



39960ST-DT	Pack code	Size
	116	16/0,15/0,14/0,13/0,12/0,11/0,10/0,9/0,8/0

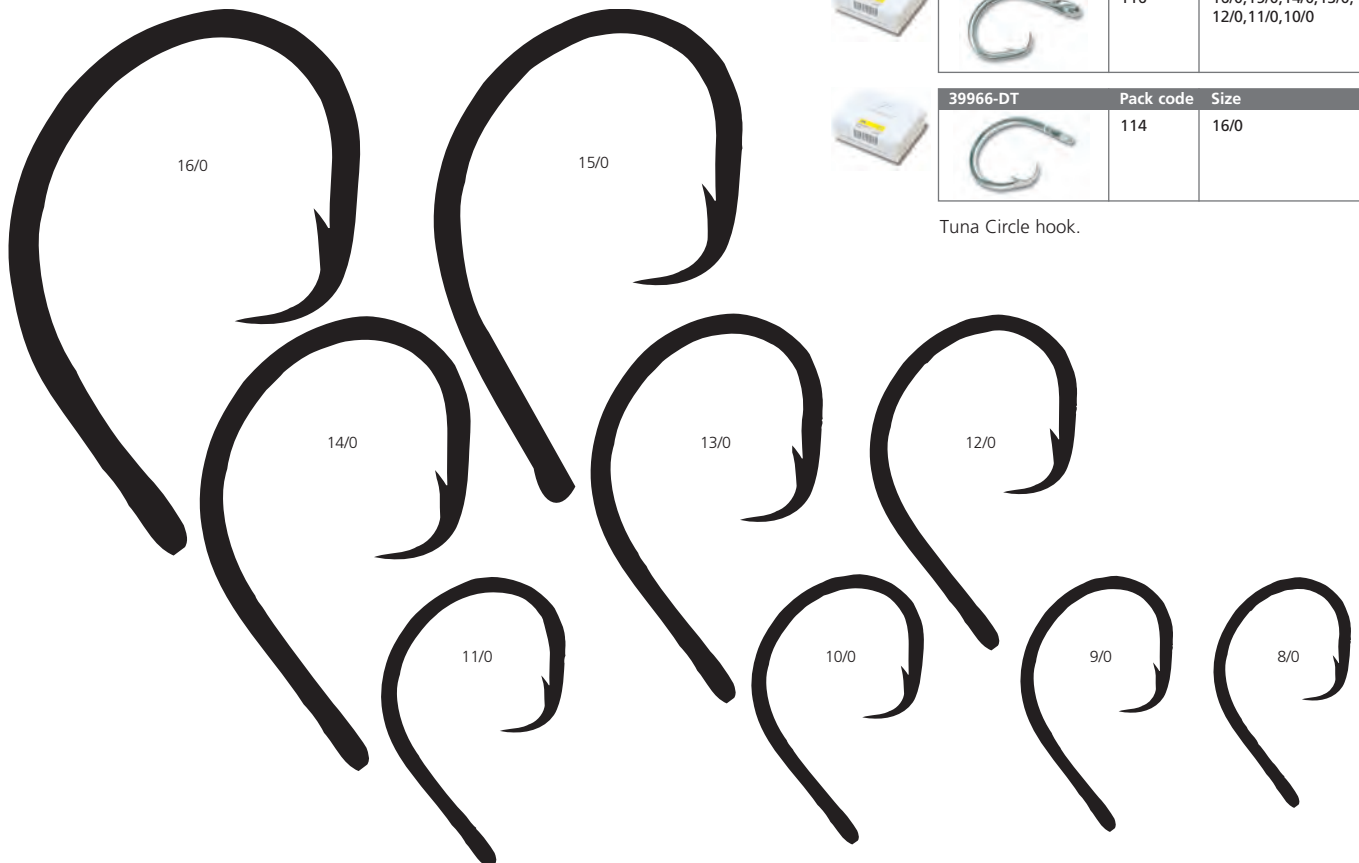


39965-DT	Pack code	Size
	116	16/0,15/0,14/0,13/0,12/0,11/0,10/0



39966-DT	Pack code	Size
	114	16/0

Tuna Circle hook.



NEW REF.

OLD REF.

31022-DT

31022D



31022-DT

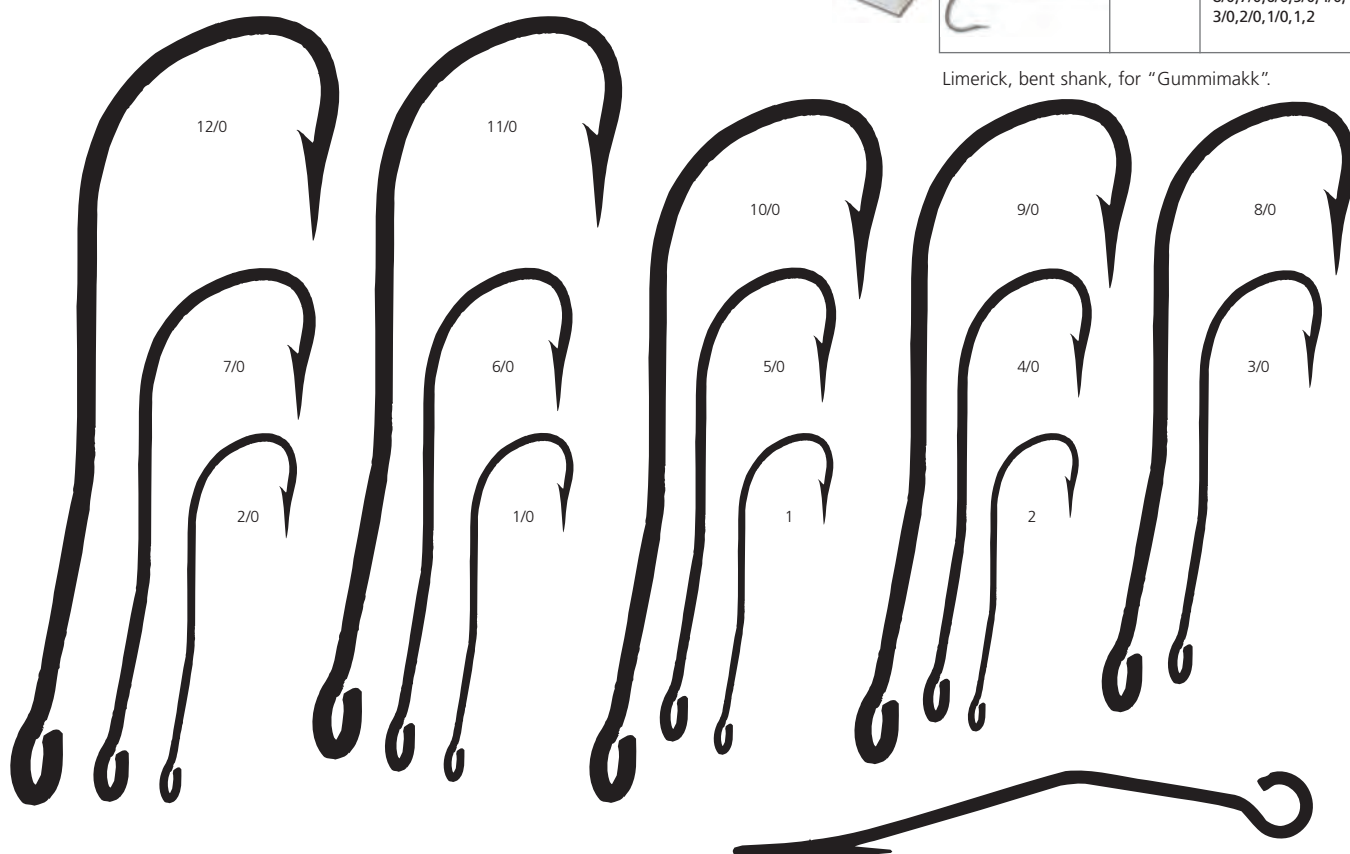
Pack code

Size

116

12/0, 11/0, 10/0, 9/0,
8/0, 7/0, 6/0, 5/0, 4/0,
3/0, 2/0, 1/0, 1, 2

Limerick, bent shank, for "Gummimakk".



LOGLINE HAUL LOG

This log is completed for each string of gear set and hauled. It reflects all the physical information relating to a single string fished: weather, water depth, hook depth, bait, target species, set/haul dates, times, position water temperature and calculated set, haul and soak durations. If you are unable to go on deck due to safety concern or illness, indicate this by **NOT** checking "HAUL OBS?" and record your reason in the COMMENTS section. The LOGLINE HAUL LOG will serve as a cover sheet and the ANIMAL LOG/S will follow with all associated catch. If a longline is hauled and there is absolutely no catch (a "water haul" or "getting skunked") indicate this on the LOGLINE HAUL LOG by **NOT** checking "CATCH?"

INSTRUCTIONS

If information is not available or unknown for any question except a "NO/YES" question, record a dash (-) in the field.

In header:

HAUL ID _____ HAUL LOG SAMPLES TAKEN? ☐ PAGE 1 of ____

HAUL ID: For lab use only. This number refers to the database. Please disregard.

SAMPLES TAKEN?: Check this box if there are biological samples taken during haulback.

PAGE 1 of ____: Record the total number of pages used on this haul. The cover page for each haul will always be page 1 and any associated **ANIMAL LOG** sheets, will start with page number 2. Do not include incidental take log or turtle forms in this number.

On page:

DATE LANDED						TRIP ID			VESSEL NAME						VESSEL #		
HAUL #	GEAR CODE		GEAR NUMBER		TARGET		HAUL OBS? <input type="checkbox"/>		CATCH? <input type="checkbox"/>		INCIDENTAL TAKE? <input type="checkbox"/>		SPLIT HAUL? <input type="checkbox"/>				

DATE LANDED: Record the month, day and year the **VESSEL ARRIVES BACK IN PORT**. This may not be same date the catch is unloaded. EXAMPLE: 07/01/12

TRIP ID: Record your assigned three character observer identifier + your three digit sequential trip number. This will be the unique trip number for all logs and field notes associated with a single trip. EXAMPLE: LFH001

VESSEL NAME: Record the name of the vessel you are deployed on. Care should be taken to record the correct spelling of the vessel's name. Do not use any punctuation; hyphens, commas or periods in vessel name fields. EXAMPLE: MR ADVENTURE, SY KI MAI, MISSYS DREAM

VESSEL #: Record the six or seven digit U.S. Coast Guard Documentation Number (AKA Vessel ID). If the vessel does not have a Coast Guard Number, record the state registration number and include the two letter state abbreviation prefix. This is not the same as the NMFS or state fishing permit number. EXAMPLE: USCG documentation number -234567 or State registration number - FL234567

HAUL: Record the haul number each time a string is set/hailed. Start with 1 for the first haul and continue sequentially for all hauls made within in a single trip. If a line is cut during the set this should be treated as two separate sets and hauls, each having its own haul log and associated animal logs.

GEAR CODE: Record the three digit code for the gear fished during this haul.

675 = Pelagic Longline
676 = Bottom Longline
677 = Rehooked Shark Longline*

*Rehooked shark longline occurs when a vessel hauls more sharks than the trip limit and resets the extra catch closer to the dock (usually near the state/federal boundary).

GEAR NUMBER: Record the gear number that best describes the configuration fished in this haul. This number relates directly to the **LOGLINE GEAR LOG** gear number. If there are multiple combinations of gear, large differences in mainline length (and hooks) or a change in target species, then an additional **LOGLINE GEAR LOG** will be completed and the appropriate gear number entered.

TARGET SPECIES: Record the primary species being targeted in this haul, using one of the following three character code abbreviations: This information is obtained from the captain **prior** to fishing activity. If you know that a specific species is being targeted, please use that species specific code (ex. SSB = sandbar, YEG = yellowedge grouper). **A change in target species will require an additional Gear Log and gear number.**

SHX = shark
GRP = grouper
SNP = snapper
TIL = tilefish
MIX = multiple target species

HAUL OBS?: Check box to indicate whether the haul was observed.

Note: An observed haul is defined as one where all of the catch hauled is recorded. An unobserved haul is defined as one where complete discard information is not collected.

CATCH?: Check box if this haul has any associated catch, recorded on **ANIMAL LOG**.

INCIDENTAL TAKE?: Check this box if a marine mammal, sea bird, sawfish, sturgeon, or sea turtle was caught in this haul. You must complete an **INCIDENTAL TAKE LOG** for all marine mammals, a **TURTLE LIFE HISTORY FORM** for each sea turtle caught, and a **PROTECTED SPECIES FORM** for each sea bird, sawfish or sturgeon caught.

SPLIT HAUL?: Check box if this haul was a split haul. Note: This will also be reflected in the **GEAR COND.** Please refer to later instructions.

SET DATA

SET DATA **DATE** **TIME** : **LATITUDE** ° **LONGITUDE** ° **TEMP (°F)**

SET BEGIN: Record date (MM/DD/YY), local time (**24 hour clock NOT hundredths of an hour**), record latitude and longitude in **degrees and decimal minutes** in the appropriate boxes (DD° MM.mmm) and temperature (°F) at beginning of gear set out. Note: If you can only get LORAN, then record both TD's and LORAN chains. These values will be converted to lat/long prior to data entry.

LINE ADDITIONS AND OTHER GEARS

LINE ADDITIONS AND OTHER GEARS	
POLYBALLS <input type="checkbox"/>	<input type="text"/>
HIGHFLIERS <input type="checkbox"/>	<input type="text"/>
DROPLINES <input type="checkbox"/>	<input type="text"/>
OTHER <input type="checkbox"/>	<input type="text"/>
BULLETS <input type="checkbox"/>	<input type="text"/>
ADD. WEIGHTS <input type="checkbox"/>	<input type="text"/>
HOOK TIMERS <input type="checkbox"/>	<input type="text"/>
TDRs <input type="checkbox"/>	<input type="text"/>

POLYBALLS: Check box if polyballs are used and record number.

HIGHFLIERS: Check box if highfliers are used and record number.

DROPLINES: Check box if droplines are used and record number.

OTHER: Check box if there is something else on the gear. Record the number and describe in the comments.

BULLETS: Check box if bullets/daubs or another small form of float are used and record number.

ADD. WEIGHTS: Check box if additional mainline weights are used and record number.

HOOK TIMERS: Check box if hook timers are used and record number.

TDRs: Check box if Temperature depth recorders are used and record the number.

MAINLINE LENGTH	<input type="text"/>	.	<input type="text"/>	NM
SET SPEED	<input type="text"/>	.	<input type="text"/>	KTS
FISHING/MIN. SET DEPTH	<input type="text"/>			FT
MAX. SET DEPTH	<input type="text"/>			FT
TOTAL ADD. WEIGHT	<input type="text"/>			LBS
TOTAL HOOKS SET	<input type="text"/>			

MAINLINE LENGTH: Record the length, to the **nearest tenth** of a nautical mile, of the main line for this set. Use available electronics or calculate using average set speed * set duration. Note: 1 nautical mile \approx 6080 feet.

SET SPEED: Record the vessel's speed, to the **nearest tenth** of a knot, during the setting of gear. This may be an average speed obtained from available electronics or a calculated value from mainline length/set duration. You should be able to get this from your GPS unit (given in knots). If the vessel is trolling, then record the average speed here (Behaviour code **5**).

FISHING/MIN. SET DEPTH: Record the minimum depth to the **nearest foot** that the fishing gear is set in. If vertical gears are used (Buoy, Bandit or Hand reels), record the actual fishing depth of the gear here.

MAX. SET DEPTH: Record to the **nearest foot** the maximum depth at which the gear fished for this haul. This can be taken from a chart or from available electronics. Note: 1 fathom \approx 6 feet

TOTAL ADD. WEIGHT: Record to the **nearest pound** the total weight of additional line weights for this haul. This is weight attached to the mainline and is not associated with highfliers or gangions/leaders.

TOTAL HOOKS SET: Record the number of hooks used for this set.

BAIT INFORMATION

		NUMBER	LBS	KIND	TYPE	COND
BAIT INFO	1					
	2					
	3					
	4					
	5					

NUMBER: Record the number of individual baits used per hook (hook number should = bait number). You can account for up to five different baits. Note, record the larger number of bait kind used in bait #1.

LBS: Record to the nearest pound the estimated total weight of bait used. You can account for up to five different baits.

KIND: Record the code that identifies the bait used. You can account for up to five different baits. If more than five types of bait were used, note other bait types in the comments.

1 = Mackerel
 2 = Herring/menhaden
 3 = Squid
 4 = Artificial
 5 = Sardine
 6 = Scad
 7 = Shark
 8 = Skate/ray
 9 = Little tunny/bonita
 11 = Catfish
 12 = Tunas
 13 = Swordfish
 14 = Flatfish/Flounder
 15 = Grouper
 16 = Bluefish
 17 = Tilefish

18 = Jacks
 19 = Barracuda
 20 = Mullet
 21 = Ladyfish
 22 = Toadfish
 23 = Eel
 24 = Drum family
 25 = Cichlid
 26 = Hake
 37 = Sparidae
 28 = Scorpionfish
 29 = Lizardfish
 30 = Remora
 31 = Needlefish
 98 = Unknown fish scraps
 99 = Other - describe

Note: Grouper stomachs are still kind 15.

TYPE: Record the one digit code that describes the type of bait used. You can account for up to five different baits.

1 = Whole

2 = Cut

3 = Live

9 = Other

COND: Record the one digit code that describes the condition of the bait used.

1 = Frozen

2 = Semi Frozen

3 = Thawed

4 = Fresh

5 = Salted

6 = Reused

9 = Other

	DATE						TIME		LATITUDE				LONGITUDE				TEMP (°F)										
SET END	M	M	D	D	Y	Y	:			°						N	°					W					

SET END: Record date (MM/DD/YY), time in 24 hr clock, latitude and longitude (DD° MM.mmm) and temperature (°F) at end of gear set out.

HAUL DATA

HAUL DATA		DATE						TIME		LATITUDE				LONGITUDE				TEMP (°F)									
HAUL BEGIN		M	M	D	D	Y	Y	:			°						N	°					W				
ENVIRONMENTAL		WEATHER				SPEED			KTS	WIND DIRECTION			MAX. WAVE HT.			FT											

HAUL BEGIN: Record date (MM/DD/YY), time in 24 hr clock, lat. and long. (DD° MM.mmm) and temperature (°F) at beginning of Haul Back.

WEATHER: Record the two digit code for the weather at the beginning of the haul.

01 = Clear

02 = Partly cloudy

03 = Continuous layer of clouds

04 = Drizzle

05 = Continuous Rain

06 = Intermittent Rain/Showers

07 = Thunderstorms with lightning

08 = Rain with fog

09 = Fog or thick haze

10 = Snow or rain and snow mixed

11 = Blowing snow

99 = Other, please describe in **COMMENTS**

WIND

SPEED: Record the **maximum** wind speed, in whole knots, at the beginning of the haul.

DIRECTION: Record the direction, **in compass degrees**, of the wind at the beginning of the haul. Wind coming from the northeast would be recorded 045. If wind is light or wind direction is difficult to determine, record either "VAR" for variable wind or a dash "-" for undetermined.

MAX WAVE HEIGHT: Record the **maximum** wave height, in **whole feet**, at the beginning of the haul. If the **wave is less than six inches**, record **0**.

PART OFF OR OTHER DELAY >20 MINUTES?	<input type="checkbox"/> DETAILS:	TOTAL TIME LOST (HRS)	<input type="text"/>	<input type="text"/>	<input type="text"/>
---	-----------------------------------	-----------------------	----------------------	----------------------	----------------------

PART OFF OR OTHER DELAY >20 MINUTES?: Check box if there was a single event (part offs, mechanical repairs, tangles or other delays) that was greater than 20 minutes (0.3 hrs).

DETAILS: Describe delay that was >20 minutes, giving times and further details. Multiple part offs that are under 20 minutes may also be noted here, **BUT** they are not cumulative and do not count towards the total delay.

TOTAL TIME LOST (HRS): Record time in Hours to the **nearest tenth** (20 mins. ≈ 00.3HRS).

HAUL END	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	TIME	<input type="text"/>	<input type="text"/>	:	<input type="text"/>	<input type="text"/>	LATITUDE	<input type="text"/>	<input type="text"/>	°	<input type="text"/>	<input type="text"/>	N	LONGITUDE	<input type="text"/>	<input type="text"/>	°	<input type="text"/>	<input type="text"/>	W	TEMP (°F)	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	------	----------------------	----------------------	---	----------------------	----------------------	----------	----------------------	----------------------	---	----------------------	----------------------	---	-----------	----------------------	----------------------	---	----------------------	----------------------	---	-----------	----------------------	----------------------	----------------------

HAUL END: Record date (MM/DD/YY), time in 24 hr clock, latitude and longitude (DD° MM.mmm) and temperature (°F) at end of haul back.

GEAR COND.	<input type="text"/>	<input type="text"/>	BEHAVIOUR	<input type="text"/>	PREDATORS	<input type="text"/>	HOOKS LOST	<input type="text"/>
------------	----------------------	----------------------	-----------	----------------------	-----------	----------------------	------------	----------------------

BEHAVIOUR: Indicate the fishing behavior employed with codes list below.

- 1 = Normal haul (first hook set is first hook hauled)
- 2 = Reverse haul (last hook set is first hook hauled)
- 3 = Anchored
- 4 = Drifting
- 5 = Trolling
- 6 = Other
- 9 = Unknown

GEAR COND: Indicate the condition of the gear at the completion of the haul back by recording the most appropriate two digit code listed below.

- 60 = No gear damage with greater than 10% hooks lost.
- 61 = No gear damage with less than or equal to 10% hooks lost.
- 62 = Less than 50% of the gear tangled or spun up due to weather/oceanic conditions.
- 63 = More than 50% of the gear tangled or spun up due to weather/oceanic conditions.
- 64 = Less than 50% of the gear tangled or spun up due to fish on the line.
- 65 = More than 50% of the gear tangled or spun up due to fish on the line.
- 66 = Parted off, gear recovered.
- 67 = Parted off, gear not recovered.
- 68 = Gear completely damaged or lost.
- 69 = Split haul* (portion of gear having additional soak time).
- 70 = Parted off, gear partially recovered.
- 71 = Trip limit reached, gear left in water.
- 99 = Other: Please specify other gear condition in **COMMENTS**.

PREDATORS: Record the presence of predators observed around the vessel **during** the haulback:

- 1 = Dolphins
- 2 = Sharks
- 3 = Sea Birds
- 4 = Other
- 5 = Combination (note in comments)

HOOKS LOST: Record the number of hooks lost. This should relate to field GEAR COND and may include "bite offs" and missing hooks, but **NOT** "cut offs".

SPLIT HAULS

A split haul occurs when a portion of the longline gear has a longer soak time than the rest of it. This situation may arise with a part off that takes **more than 6 hours** to recover (gear condition **70**) or when the trip limit is reached (gear condition **71**) and the line is intentionally parted. When this happens, the haul should be split into two hauls reflecting the two separate retrievals. The new haul will have the next sequential haul number unless the trip limit has been reached. Reaching the trip limit is common for Large Coastal Shark (LCS) trips. The limit of 33 sharks is easily reached in certain areas. The vessel will run back to the dock and unload their catch. When the vessel returns to the gear, this represents the start of a new trip. Your observer trip number will advance by one. In either situation, the two haul logs will contain the same set information. The haul with the additional soak time gets a gear condition code of **69**. The actual amount of gear that is retrieved in each haul is recorded in the **SPLIT HAUL INFORMATION**. So, as long as no substantial amount of gear is lost, the **SPLIT HAUL INFORMATION** from both hauls should add up to the total amount gear set.

SPLIT HAUL INFORMATION (gear hauled)				BAIT INFO	
				NUM	LBS
DROPLINES		MAINLINE		1	
BULLETS		ADD. WEIGHTS		2	
POLYBALLS		ADD. WEIGHT		3	
HIGHFLIERS		HOOK TIMERS		4	
TDRs		HOOKS HAULED		5	

SPLIT HAUL INFORMATION: Record estimates of amount of gear hauled for number of droplines, bullets, polyballs, highfliers, TDRs, length of mainline hauled, the number of additional line weights, the weight of additional line weights (lbs), number of hook timers and number of hooks hauled. As the number of hooks will be different from the set out information, the bait amounts will also have to be recalculated. Please note bait number and lbs in the **BAIT INFO** section.

COMMENTS: Please use the comments section liberally. If more space is required, use the back of the sheet and include "see back" on the front. We like comments; they will sometimes help avoid a phone call.

In footer:

NOAA Fisheries Panama City SBLOP

TDRs start: _____ middle: _____ end: _____

SBLOP Haul log Revised 01-13

TDRS: This is for office use only. Once the average temperatures have been downloaded from the TDRs, they are recorded here so that there is a record with the original data.

Beaufort Wind Force Scale

The Beaufort wind force scale was created by Rear-Admiral, Sir Francis Beaufort, around 1805 when he was a captain in the Royal Navy. The scale was designed to gauge wind speed using observations of the winds effects on a sailing ship and other objects when one was without the benefit of expensive equipment.

Force	Wind Speed			WMO Description	Wind Speed Indicators	
	MPH	Knots	Km/H		At Sea	On Land
0	<1	<1	<3	Calm	Ripples with appearance of scales; no foam crests	Smoke drift indicates wind direction; vanes do not move
1	1-3	1-3	1-5	Light Air	Small wavelets; crests of glassy appearance	Wind felt on face; leaves rustle; vanes begin to move
2	4-7	4-6	6-11	Light Breeze	Small wavelets; crests of glassy appearance	Wind felt on face; leaves rustle; vanes begin to move
3	8-12	7-10	12-29	Gentle Breeze	Large wavelets; crests begin to break, scattered whitecaps	Leaves & small twigs in motion; light flags extended
4	13-18	11-16	20-29	Moderate Breeze	1-4 ft. waves; numerous whitecaps	Leaves, & loose paper raised up; flags flap; small branches move.
5	19-24	17-21	30-38	Fresh Breeze	4-8 ft waves; many whitecaps; some spray	Small trees begin to sway; flags flap & ripple
6	25-31	22-27	39-50	Strong Breeze	8-13 ft waves forming white caps everywhere; more spray	Large branches in motion; whistling heard in wires
7	32-38	28-33	51-61	Near Gale	13-20 ft. waves; white foam blows in streaks	Whole trees in motion; resistance felt in walking against wind
8	39-46	34-40	62-74	Gale	13-20 ft. waves; edges of crests begin to break; foam in streaks	Whole trees in motion; resistance felt in walking against wind
9	47-54	41-47	75-86	Strong Gale	20 ft. waves; sea begins to roll; dense streaks of foam; spray may affect visibility	Slight structural damage occurs; shingles blow from roofs
10	55-63	48-55	87-101	Storm	20-30 ft. waves; white churning sea; rolling is heavy; reduced visibility	Trees broken or uprooted; considerable structural damage occurs
11	64-74	56-63	102-120	Violent Storm	30-45 ft. waves; white foam patches; visibility affected	Widespread damage to trees & buildings
12	75+	64+	120+	Hurricane	45 ft.+ waves; white sea; driving spray; visibility seriously affected	Severe & extensive damage

ANIMAL LOG INSTRUCTIONS

This log is to be used to record catch information: species, live/dead, kept/release, size and sex of animals caught on sets using longline or vertical gears.

If information is not available or unknown for any question except a "NO/YES" question, record a dash (-) in the field.

In header:

HAUL ID: For lab use only. This number refers to the database. Please disregard.

On page:

OBS TRIP ID: Record a 6 character observer/trip identifier. This Field uses an assigned 3-letter observer identifier (three initials) followed by a 3-digit (001-999) accumulative numerical trip identifier. This identifier is recorded on all logs within a single trip.

Example: LFH001, JKC999

VESSEL NAME: Record the name of the vessel. This is usually displayed on the vessels' bow and stern.

Example: CAPT MIKE, MR PROWLER, PROVIDER III

VESSEL NUMBER: Record the U.S. Coast Guard Documentation Number, this number (6-7 digits) should be displayed prominently on the vessels' wheelhouse. If the vessel does not have a Coast Guard Number, record the state registration number, which should also be displayed on the wheelhouse and begins with the 2 letter state abbreviation.

Example: 987602, 1028691 or FL2056GY

HAUL NUMBER: Record the consecutive number each time the gear is hauled, starting with 1 for the first set and haul, and continuing with 2, for the second set and haul, etc.

HAUL DATE: Record the month, day, year that the haul back of the gear begins.

Example: 07/03/2000

PAGE NUMBER: Record this page number, and the total number of pages used on this haul. The haul log will always be page number 1 and the Individual Animal Logs will be numbered sequentially **starting with page number 2**.

Example: haul log + 5 animal logs, recorded as 2 of 6, 3 of 6, 4 of 6, 5 of 6 and 6 of 6

SAMPLES TAKEN?: Check this box if there are biological samples taken from any specimens on that page of the animal log.

SPECIES

SPEC #: Specimen numbers start with a **value of 101**, which should avoid being misread at the fish house (100 vs 001) and duplication with any turtle specimen numbers (1, 2, 3 etc). Please number turtles **starting with 001** and number sequentially as encountered within a single trip.

NAME: Record a three letter designation (**SEE SPECIES CODE LIST**) for each species, including marine mammals, sea turtles or sea birds that may be caught incidentally. Attempt to identify all animals to species. If you do not get a clear look at the animal do not hesitate to use group abbreviation (SHX, TUN, GRP, etc.).

CODE: Record the 4 digit species code (**SEE SPECIES CODE LIST**). If you are unable to identify to a species or species is unlisted, photograph and leave blank until debriefing.

IF UNSURE ABOUT ID, TAKE PICTURE AND FINCLIP!!

If the hook timer is popped but no animal is on the hook or the hook is missing or damaged, record species code UHT and specimen number 9998 as a new individual animal.

BOARD TIME: Indicate the time that the animal was boarded, in 24 hours and minutes. Every hook equipped with a hook timer should have a corresponding board time recorded when hauled.

STATUS: Indicate the condition of the animal when boarded with the codes provided on the datasheet. If damaged, then record information in the **DAMAGE** code section. Code 5 refers to animals that were tended or rehooked from a previous trip or haul (disposition code 6).

Code	Status
0	Unknown
1	Alive
2	Dead
3	Alive and Damaged
4	Dead and Damaged
5	Previously Caught
6	Alive and Baurotrama – Swim Bladder/Stomach Protruding
7	Alive and Baurotrama – Eyes Protruding
8	Alive and Baurotrama – Both Protruding

HOOK LOCATION: Indicate the location that the animal was hooked. For foul-hooked animals, indicate in the comments section whether hook was in dorsal fin, pectoral fin, or caudal fin, or some other area. For internally-hooked animals, indicate in the comments section whether hook was in gills/branchial arch or in gut.

Code Hook Location

- 1 Mouth/Jaw
- 2 Internal
- 3 Foul (please comment location of foul hooking. Example: Left Pec.)
- 9 Unknown

HOOK TYPE: Please indicate which style hook the animal was caught on as recorded on the gear log (1-6) If unknown record 9.

ACTION: Indicate the fate of the animal with the codes provided on the datasheet. For Action 8 provide a comment with % or portion of animal kept. Multiple codes can be used. Ex.: Shark is kept for bait but fins are also kept record 7, 4.

Code Action

- 0 Unknown
- 1 Kept
- 2 Released dead
- 3 Released alive
- 4 Finned and carcass discarded
- 5 Lost at surface
- 6 Tended / Rehooked
- 7 Kept as bait
- 8 Portion of carcass kept
- 9 Previously kept, discarded dead

VENTED: Was the animal properly vented by crew or observer before being released alive? All catch should have this box filled in with a Y, N or U for venting. **All kept animals will be N.**

FL (CM): Attempt to obtain a **straight line fork length** measurement in centimeters from **ALL DEAD CATCH** brought onboard. Do not try to piece animals together that have been cut. Estimated lengths for incidentally taken mammals and turtles should also be recorded here. Additional information will be recorded on the incidental take log for mammals, the sea bird life history forms, or the turtle life history forms. All sharks, tuna and other finfish species are to be taken as a straight measurement. Record the curved measured length of all billfish and swordfish to nearest centimeter according to the standards below. Skates and rays should be measured at their widest point, wing tip to wing tip (disc width). Estimated lengths should be taken for all dead/live released animals to the nearest foot. Measurements can easily be converted to centimeters using (1 foot = 30 cm). Enter the defined length and record a 3 in the length code. If samples are taken

(vertebrae, otolith, reproductive tract, stomach) then a straight line measurement **MUST** be taken.

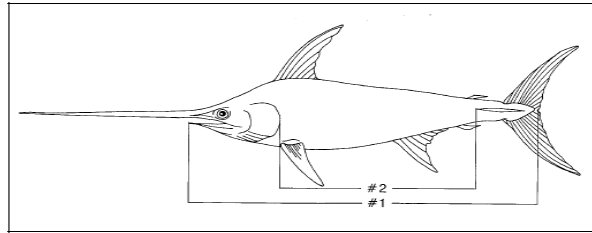


Figure 1. Swordfish measurements: Tip of lower jaw to fork of tail (curved)

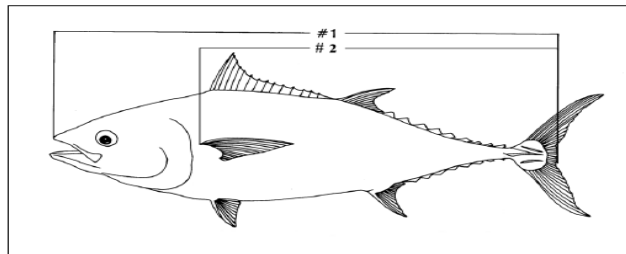


Figure 2. Tuna measurements: Tip of upper jaw to fork of tail (straight)

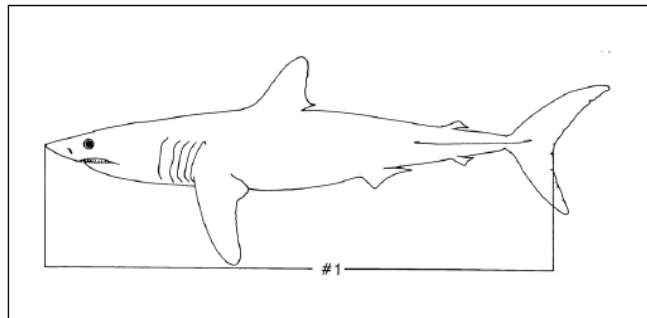


Figure 3. Shark measurement: Tip of snout to fork of tail (straight)

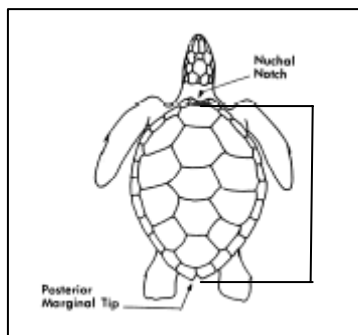


Figure 4. Turtle measurement: Notch to tip carapace length (curved)

L CODE: Indicate the measurement type with the codes provided below. Curved line estimates are only acceptable for sea turtle carapace and swordfish lengths.

Code Measurement type

- 1 Straight line
- 2 Curved line
- 3 Estimated

WEIGHT (KG): Record the weight in kg to the nearest tenth. Sampled reef fish must be weighted. 1 lb is 0.454 kg.

W CODE: Indicate the weight type with the codes provided below.

Code Weight type

- 1 Whole
- 2 Gutted
- 3 Estimated

SEX: Record the sex of this animal, coded as follows:

Code Sex

- U Unknown
- M Male
- F Female
- X Undetermined (Inspected but unknown)

S CODE: Record the maturity stages, coded as follows:

Code Stage

- 0 Unknown
- 1 Calcified claspers (elasmobranchs only)
- 2 Pregnant (elasmobranchs only)
- 3 Running ripe - Males with sperm; Females with hydrated oocytes (teleosts only)
- 4 Secondary sex characteristic – describe in comments
- 9 Undetermined (Inspected but unknown)

DAMAGE: Record the number code for the damage type. Damage includes complete bites, scavenging, or any other type of discernable damage from another animal while that animal is on the gear.

Code Cause

- | | |
|---|------------------|
| 1 | Shark (SHX) |
| 2 | Dolphin (MDO) |
| 3 | Bird (BRD) |
| 4 | Squid (SQI) |
| 5 | Crustacean (CRU) |
| 6 | Teleost (TEL) |
| 7 | Fishing Gear |
| 8 | Other (describe) |
| 9 | Unknown |

D CODE: Record the code for amount of damage, as follows:

Code Amount

- | | |
|---|---|
| 1 | <10% damaged, including gills eaten out |
| 2 | 25% damaged, or bitten up to the pelvic/anal fins |
| 3 | 50% damaged, or bitten up to the pectoral fins |
| 4 | 75% damaged, or bitten up to gills (head onlys) |
| 5 | >90% damaged, or just the lips |
| 6 | Suspected mating scars |

TIMER TIME: Record the time recorded by the hook timer for that individual animal. A BOARD TIME should also be recorded. If the hook timer is popped but no animal is on the hook or the hook is missing or damaged, record species code UHT and specimen number 9998 as a new individual animal.

T CODE: Record the code for the timer condition, as follows:

Code Condition

- | | |
|---|---|
| 1 | Popped timer with fish on |
| 2 | Unpopped timer with fish on |
| 3 | Empty popped hook timer with bait |
| 4 | Empty popped hook timer without bait |
| 5 | Malfunctioning hook timer |
| 6 | Other |
| 7 | Unpopped timer with no fish on but with bait |
| 8 | Unpopped timer with no fish on and no bait either |
| 9 | Unknown |

TAG NUMBER: Record the complete tag number (including any alpha prefix) for each tag/release animal. Attempt to re-tag a live fish that already has a tag in place (record both tag numbers). Always request that a dead tagged animal be brought on board, and if a tagged shark is kept by the fishers, record the tag number and other pertinent information and take a vertebrae sample (the fishers can report the tag for reward if they wish). Make sure that you indicate whether tag was recovered or deployed using the **TN CODES** below.

TN CODE: Indicate the origin of the tag number from above with the codes provided.

Code Tag State

- 1 Tagged and released alive
- 2 Retagged and released alive
- 3 Recaptured and kept/released dead

COMMENT: This area may also be used to record a **brief comment about an individual animal**. Examples of comments include incidental take details, distinguishing characteristics for identification, or any other pertinent information related to the catch of that specimen. If an individual was damaged by another animal on the line, record that animal's spec. number in this comment field ie. if spec. #115 is an SAS head that is on the same hook as (and was probably consumed by) SBK #116, then record #116 in the comment from #115).

SAMPLES TAKEN: Check the boxes for each type of samples taken (Otolith, Vertebrae, Stomach, Reproductive (includes shark reproductive tract and teleost gonads), Fin clip) from individual animals. **If you take a reproductive sample, always take a vertebrae/otolith sample as well.** If the whole specimen was collected, write "WHOLE" in the Comments section. Also note if a picture was taken of an animal.

COMMENTS: Record comments on individual animals or observations on the haul that are not covered in the other fields.

TRIP SUMMARY
(This will be the cover sheet to your trip datasheets)

Trip ID: _____ **Vessel name:** _____ **Vessel #:** _____

Owner/Captain Name: _____ **# of Crew** _____

Incidental Take: Y / N **If Yes what haul number(s):** _____

Biological Samples Taken: Y / N

Departure Date: _____ **Departure Port:** _____
mm/dd/yyyy City, State

Return Date: _____ **Return Port:** _____
mm/dd/yyyy City, State

Sea Days: _____ **Number of Hauls:** _____

Target: _____ **SRF** ☐ **DEEP GRP** ☐ **SHALLOW GRP** ☐

Weigh out location _____ **Copy included** Y / N

Invoice: Be sure to get captain/owner SS# and signature!

_____ Enclosed with trip data (For multiple trips per invoice, indicate which Trip ID _____)

_____ Left completed with captain/owner

Vessel accommodations:

Head: Y / N **AC and/or Heat:** Y / N (circle which applies)

Bunk: Y / N **Bunk Location** _____

Fresh Water and/or Shower: Y / N (circle which applies) **Infections:** Y / N

Comments:

Office use only:

Data received: _____

Trip Number: _____

Debrief: _____

Data entry: _____

Invoice filed: ____/____/____

Dbase proofed: _____

VESSEL REIMBURSEMENT FORM

OBSERVER TRIP ID	OBSERVER NAME	VESSEL NAME
DATES OF TRIP	MEAL EXPENSES	TOTAL COST
	\$25/DAY X	
CORPORATION / OWNER NAME	EIN or SSN	MAILING ADDRESS AND PHONE #
DATE	SIGNATURE	
OFFICE USE ONLY	INVOICE CODE	TASK NUMBER

PLEASE FILL OUT ALL BLANKS (EXCLUDING INVOICE CODE AND TASK NUMBER) AND MAIL TO:

Simon Gulak
 NOAA Fisheries
 3500 Delwood Beach Road
 Panama City, FL 32408

PAPERWORK REDUCTION ACT STATEMENT: The information provided on this form will be used to reimburse you for specific expenses during the observed trip identified on the form. That trip was observed in order to collect information that is used in analyses that support the conservation and management of living marine resources and that are required under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), the National Environmental Policy Act (NEPA), the Regulatory Flexibility Act (RFA), Executive Order 12866 (EO 12866), and other applicable law. The public reporting burden for this form is estimated to average 10 minutes per response, including the time for completing, reviewing, and transmitting the information on the form. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: National Marine Fisheries Service, F/SF1, National Observer Program, 1315 East West Highway, Silver Spring, MD 20910. Providing the requested information is required to have the Central Administrative Support Center (CASC) and United States Treasury process and pay the reimbursement. The information on this form will be kept confidential as required under Section 402(b) of the MSA (18 U.S.C. 1881a(b)) and regulations at 50 C.F.R. Part 600, Subpart E. Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number. This is an approved information collection under OMB Control No. 0648-0593 through 11/30/2015.

OBS/TRIP NUMBER	VESSEL NAME	VESSEL NUMBER	DATE LANDED (mm/dd/yyyy)
-----------------	-------------	---------------	--------------------------

GEAR NUMBER		# OF HAULS		AVG. # HOOKS		TOTAL # HOOKS (trip start)	
-------------	--	------------	--	--------------	--	----------------------------	--

MAINLINE COLOR TEST LBS

MATERIAL DIAMETER MM

STRANDS AVG. LENGTH NM

LINE ADDITIONS

POLYBALLS ☐ HOOK TIMERS ☐

BULLETS ☐ TDRs ☐

HIGHFLIERS ☐ ADD. WEIGHTS ☐

OTHER ☐

DROPLINES ☐ AVG. DROPLINE LENGTH FT

DISTANCE BETWEEN DROPLINES FT

GANGIONS COLOR TEST LBS

MATERIAL DIAMETER MM

SWIVELS PER GANGION


AVG. LENGTH FT AVG. #

DISTANCE BETWEEN GANGIONS FT

LEADERS USED? ☐ MATERIAL

TEST LBS LENGTH IN

INDICATE LOCATION OF HAULING STATION ON VESSEL DIAGRAM



HOOK	BRAND	TYPE	MODEL	SIZE	OFFSET	DEGREE
1	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">/0</div>	<input type="checkbox"/>	<div style="border: 1px solid black; height: 20px;"></div>
2	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">/0</div>	<input type="checkbox"/>	<div style="border: 1px solid black; height: 20px;"></div>
3	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">/0</div>	<input type="checkbox"/>	<div style="border: 1px solid black; height: 20px;"></div>
4	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">/0</div>	<input type="checkbox"/>	<div style="border: 1px solid black; height: 20px;"></div>
5	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">/0</div>	<input type="checkbox"/>	<div style="border: 1px solid black; height: 20px;"></div>
6	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">/0</div>	<input type="checkbox"/>	<div style="border: 1px solid black; height: 20px;"></div>

COMMENTS

HAUL ID _____

HAUL LOG

SAMPLES TAKEN? ☐

PAGE 1 of ____

DATE LANDED		TRIP ID		VESSEL NAME		VESSEL #	
HAUL #		GEAR CODE		GEAR NUMBER		TARGET	
						HAUL OBS? <input type="checkbox"/> CATCH? <input type="checkbox"/> INCIDENTAL TAKE? <input type="checkbox"/> SPLIT HAUL? <input type="checkbox"/>	

SET DATA		DATE		TIME		LATITUDE		LONGITUDE		TEMP (*F)	
<i>SET BEGIN</i>											

LINE ADDITIONS AND OTHER GEARS				MAINLINE LENGTH		SET SPEED		MIN. SET DEPTH		MAX. SET DEPTH		TOTAL ADD. WEIGHT		TOTAL HOOKS SET	
POLYBALLS <input type="checkbox"/> BULLETS <input type="checkbox"/> HIGHFLIERS <input type="checkbox"/> ADD. WEIGHTS <input type="checkbox"/> DROPLINES <input type="checkbox"/> HOOK TIMERS <input type="checkbox"/> OTHER <input type="checkbox"/> TDRs <input type="checkbox"/>															

SET END		DATE		TIME		LATITUDE		LONGITUDE		TEMP (*F)	

HAUL DATA		DATE		TIME		LATITUDE		LONGITUDE		TEMP (*F)	
<i>HAUL BEGIN</i>											

ENVIRONMENTAL		WEATHER		SPEED		WIND DIRECTION		MAX. WAVE HT.	

PART OFF OR OTHER		DETAILS:	
DELAY >20 MINUTES? <input type="checkbox"/>			

HAUL END		DATE		TIME		LATITUDE		LONGITUDE		TEMP (*F)	

GEAR COND.				BEHAVIOUR				PREDATORS				HOOKS LOST			

COMMENTS:			

SPLIT HAUL INFORMATION (gear hauled)				NUM		LBS	
POLYBALLS <input type="checkbox"/> MAINLINE <input type="checkbox"/> NM HIGHFLIERS <input type="checkbox"/> ADD. WEIGHTS <input type="checkbox"/> DROPLINES <input type="checkbox"/> ADD. WEIGHT <input type="checkbox"/> LBS BULLETS <input type="checkbox"/> HOOK TIMERS <input type="checkbox"/> TDRs <input type="checkbox"/> HOOKS HAULED <input type="checkbox"/>							

BAIT INFO		NUMBER		LBS		KIND		TYPE		COND	

HAUL ID_____

ANIMAL LOG

OBS/TRIP ID	VESSEL NAME								VESSEL #	HAUL #	HAUL DATE <small>mm/dd/yyyy</small>						PAGE ____ OF ____	SAMPLES Y/N												
SPECIES			BOARD TIME	STATUS	HOOK		ACTION	VENTED	FL (CM)	L CODE	WEIGHT (KG)	W CODE	SEX	S CODE	DAMAGE	D CODE	TIMER TIME	T CODE	TAG NUMBER	TN CODE	COMMENT	SAMPLES TAKEN								
SPEC #	NAME	CODE			LOCATION	TYPE																Oo	Vert	Stom	Repro	Fm	Pc			
COMMENTS																														

Safety Training and Manual

The NOAA Fisheries observer programs consider safety the most important concern for an observer on a fishing vessel. While your job at sea is to collect data and samples, your first and foremost job is to stay alive and uninjured.

If you at any time feel unsafe on a vessel, either before boarding or after sailing, do not hesitate to refuse the trip and/or have yourself removed from the vessel.

You must take responsibility for your own safety and learn as much as you can before an emergency threatens your life. Safety-minded captains who realize the danger of their occupation and consider safety in all that they do operate most fishing vessels. Use the knowledge and experience of the vessel's crew for guidance on safety on your vessel. They are certainly concerned about the safety of an Observer, a guest on their vessel, and will make sure that the dangers for you are minimized. No matter how cautious the crew is it is your responsibility to keep yourself safe and know how to react in an emergency situation.

Medical Fitness for Sea

Individuals selected for employment with the Southeast Fisheries Science Center (SEFSC) as fishery observers must be fully qualified to safely and efficiently perform the essential duties and responsibilities of their positions. You will be required to complete a Report of Medical History (Standard Form 93) to be held in a confidential file and reviewed only in the event of a medical emergency at sea. You must inform the Observer Coordinator, in writing, of any medical condition or situation, including medications being taken, prior to departing on a vessel.

Living Conditions

Cleanliness, upkeep, safety, comfort of quarters, quality of food, and general attitude of the vessel personnel vary from vessel to vessel. Observers must be flexible and function professionally under a wide variety of living conditions.

Guidelines developed from experience are: show respect to others and it will be returned to you. Clean up after yourself and make a conscious effort to maintain a professional appearance. Adaptable observers with an easygoing attitude will likely receive more cooperation than those who criticize and make demands. Observers will inevitably encounter individuals who will take great pleasure in "ribbing" observers with talk of turtle soup recipes and government spies. Don't let it bother you. The more attention you give these individuals, the longer they will continue. Bringing books or music or other personal items give you an escape from the crew.

Accidents and Illness Aboard

All Accidents and Illness must be Reported within 24 Hours of Occurrence

In the event of an emergency such as an injury or serious illness requiring hospitalization, the captain and the USCG should be contacted via radio and they will attempt a rescue and/or advise you on how to proceed. If it is you or another observer that is involved, have the USCG also notify the Observer Coordinators, and keep them advised.

If you are injured, regardless of how minor you may perceive the injury to be you must document the incident in your log book and report it to your supervisor as soon as possible. You must also fill out an IAP Employee Incident Report Form and turn it into Chad Lefferson (please also copy and send to your Observer Coordinator) even if no medical treatment was/is necessary. These measures are for your protection. Do not neglect your responsibilities to report injuries or illness.

Training

Prior to your first assignment, you will receive training in safety and survival at sea. At a minimum, the training curriculum will include the following subjects:

1. First Aid and CPR Certification
2. Proper use and care of personal flotation devices and immersion suits
3. Abandon vessel and man overboard procedures
4. Life raft deployment and STAY rules; in water liferaft skills
5. Cold water and hypothermia; in water survival
6. Familiarity and usage of personal EPIRB
7. Survival skills and kits
8. Use of marine VHF radio, SSB radio, and satellite phone
9. Distress calls and signals; flares
10. Fire safety and prevention
11. Vessel stability and flooding
12. At-sea and sea-air transfers.
13. Vessel safety requirements and pre-trip vessel check
14. General safety on small boats
15. At sea personal health and hygiene

Included in this Safety Manual are materials used in your safety training and also information on various safety issues.

I. Safety Manual Introduction

- Emergency Contacts
- Medical History Form (fill out and return)

II. Personal health and hygiene

- Sleep Deprivation
- Seasickness
- First Aid Kit
- IAP Infection
- MRSA Information
- IAP Incident Report and Witness Report Forms

III. Safety on Vessels

- Before deployment on a vessel
- Pre-Trip Vessel Safety checklist
- Coast Guard Vessel Decal
- Safety aboard vessels
- 7 Ways to be Injured
- Typical Injuries
- Fish Handling Safety
- Types of Emergencies
- Preparing for Bad Weather on a Vessel

IV. Survival Skills

V. Safety Equipment

- PFD and Immersion Suit Use and Maintenance
- Distress Calls and Signals
- EPIRB Use and Maintenance

VI. Man Overboard and Abandon Ship Procedures

- Man Overboard
- Abandon Ship
- Fake Hydrostatic Release
- Coast Guard Rescue
- STAY rules

VII. Cold water and Hypothermia Survival

VIII. Fire and flood

- Vessel stability and Flooding
- Fire Prevention and Fighting

IX. Observer Emergency 1st Person Account

X. Communication for Observers

EMERGENCY CONTACT INFORMATION

In the event of an emergency please contact emergency services, then your observer coordinator, then IAP World Services. For medical advice, in a non-emergency situation, contact the IAP Nurse.

NOAA FISHERIES PANAMA CITY

SBLOP COORDINATOR – Simon Gulak	Office: 850-234-6541 ext 236 Cell: 850-387-0701 Email: Simon.Gulak@noaa.gov
SGOP COORDINATOR – Alyssa Mathers	Office: 850-234-6541 ext 226 Cell: 850-890-3853; 850-933-2084 Email: Alyssa.Mathers@noaa.gov
ASST COORDINATOR – Michelle Passerotti	Office: 850-348-3176 Cell: 850-445-6636 Email: Michelle.Passerotti@noaa.gov
ASST COORDINATOR – Michael Enzenauer	Office: 850-234-6541 ext 260 Cell: 952-393-4612 Email: Michael.Enzenauer@noaa.gov
ADMINISTRATOR – John Carlson	Office: 850-234-6541 ext 221 Cell: 850-624-9031 Email: John.Carlson@noaa.gov
IAP WORLD SERVICES	
PROJECT MANAGER – Chad Lefferson	Office: 228-549-1662 Cell: 228-218-1892 Email: Chad.Lefferson@noaa.gov
ADMIN. CONTACT – Brenda Lewis	Office: 228-549-1659 Cell: 228-249-1889 Email: Brenda.Lewis@noaa.gov
IAP NURSE – Carol Missimer	Office: 321-784-7167 Email: Carol.E.Missimer@iapws.com
IAP Nurse 24 Hour Hotline: 877-269-6877	

1. NAME OF PATIENT <i>(Last, first, middle)</i>		2. IDENTIFICATION NUMBER	3. GRADE
4a.. HOME STREEET ADDRESS <i>(Street or RFD; City or Town; State; and ZIP Code)</i>		5. EXAMINING FACILITY	
4b. CITY	4c. STATE		

a. PRESENT HEALTH	b. CURRENT MEDICATION		REGULAR OR INTERM.
c. ALLERGIES (<i>Include insect bites/stings and common foods</i>)			
		d. HEIGHT	e. WEIGHT
8. PATIENT'S OCCUPATION	9. ARE YOU (<i>Check one</i>)		
	<input type="checkbox"/> RIGHT HANDED <input type="checkbox"/> LEFT HANDED		

CHECK EACH ITEM	YES	NO	DON'T KNOW	CHECK EACH ITEM	YES	NO	DON'T KNOW	CHECK EACH ITEM	YES	NO	DON'T KNOW
Household contact with anyone with tuberculosis				Shortness of breath				Bone, joint or other deformity			
				Pain or pressure in chest				Loss of finger or toe			
Tuberculosis or positive TB test				Chronic cough				Painful or "trick" shoulder or elbow			
Blood in sputum or when coughing				Palpitation or pounding heart				Recurrent back pain or any back injury			
				Heart trouble							
Excessive bleeding after injury or dental work				High or low blood pressure				"Trick" or locked knee			
				Cramps in your legs							
Suicide attempt or plans				Frequent indigestion				Foot trouble			
Sleepwalking				Stomach, liver, or intestinal trouble				Nerve Injury			
Wear corrective lenses				Gall bladder trouble or gallstones				Paralysis (<i>including infantile</i>)			
Eye surgery to correct vision								Epilepsy or seizure			
Lack vision in either eye				Jaundice or hepatitis				Car, train, sea or air sickness			
Wear a hearing aid				Broken bones				Frequent trouble sleeping			
Stutter or stammer				Adverse reaction to medication				Depression of excessive worry			
Wear a brace or back support				Skin diseases				Loss of memory or amnesia			
Scarlet fever				Tumor, growth, cyst, cancer				Nervous trouble of any sort			
Rheumatic fever				Hernia				Periods of unconsciousness			
Swollen or painful joints				Hemorrhoids or rectal disease				Parent/sibling with diabetes, cancer, stroke or heart disease			
Frequent or severe headaches				Frequent or painful urination							
Dizziness or fainting spells				Bed wetting since age 12				X-ray or other radiation therapy			
Eye trouble				Kidney stone or blood in urine				Chemotherapy			
Hearing loss				Sugar or albumin in urine				Asbestos or toxic chemical exposure			
Recurrent ear infections				Sexually transmitted diseases							
Chronic or frequent colds				Recent gain or loss of weight				Plate, pin or rod in any bone			
Severe tooth or gum trouble				Eating disorder (anorexia bulimia, etc.)				Easy fatiguability			
Sinusitis								Been told to cut down or criticized for alcohol use			
Hay Fever or allergic rhinitis				Arthritis, Rheumatism, or Bursitis				Used illegal substances			
Head Injury								Used tobacco			
Asthma				Thyroid trouble or goiter							

11. FEMALES ONLY

CHECK EACH ITEM	YES	NO	DON'T KNOW	DATE OF LAST MENSTRUAL PERIOD	DATE OF LAST PAP SMEAR	DATE OF LAST MAMMOGRAM
Treated for female disorder						
Change in menstrual pattern						

CHECK EACH ITEM. IF "YES" EXPLAIN IN BLANK SPACE TO RIGHT. LIST EXPLANATION BY ITEM NUMBER.

ITEM	YES	NO
12. Have you been refused employment or been unable to hold a job or stay in school because of.		
a. Sensitivity to chemicals, dust, sunlight, etc.		
b. Inability to perform certain motions.		
c. Inability to assume certain positions.		
d. Other medical reasons <i>(If yes, give reasons.)</i>		
13. Have you ever been treated for a mental condition? <i>(If yes, specify when, where, and give details.)</i>		
14. Have you ever been denied life insurance? <i>(If yes, state reason and give details.)</i>		
15. Have you had, or have you been advised to have, any operation? <i>(If yes, describe and give age at which occurred.)</i>		
16. Have you ever been a patient in any type of hospital? <i>(If yes, specify when, where, why, and name of doctor and complete address of hospital.)</i>		
17. Have you consulted or been treated by clinics, physicians, healers, or other practitioners within the past 5 years for other than minor illnesses? <i>(If yes, give complete address of doctor, hospital, clinic, and details.)</i>		
18. Have you ever been rejected for military service because of physical, mental or other reasons? <i>(If yes, give date and reason for rejection.)</i>		
19. Have you ever been discharged from military service because of physical, mental, or other reasons? <i>(If yes, give date, reason, and type of discharge; whether honorable, other than honorable, for unfitness or unsuitability.)</i>		
20. Have you ever received, is there pending, or have you applied for pension or compensation for existing disability? <i>(If yes, specify what kind, granted by whom, and what amount, when, why.)</i>		
21. Have you ever been arrested or convicted of a crime, other than minor traffic violations. <i>(If yes, provide details.)</i>		
22. Have you ever been diagnosed with a learning disability? <i>(If yes, give type, where, and how diagnosed.)</i>		

23. LIST ALL IMMUNIZATIONS RECEIVED

I certify that I have reviewed the foregoing information supplied by me and that it is true and complete to the best of my knowledge. I authorize any of the doctors, hospitals, or clinics mentioned above to furnish the Government a complete transcript of my medical record for purposes of processing my application for this employment or service. I understand that falsification of information on Government forms is punishable by fine and/or imprisonment.

24a. TYPED OR PRINTED NAME OF EXAMINEE	24b. SIGNATURE	24c. DATE
--	----------------	-----------

NOTE: HAND TO THE DOCTOR OR NURSE, OR IF MAILED MARK ENVELOPE "TO BE OPENED BY MEDICAL OFFICER ONLY".

25. PHYSICIAN'S SUMMARY AND ELABORATION OF ALL PERTINENT DATA *(Physician shall comment on all positive answers in Items 7 through 11. Physician may develop by interview any additional medical history deemed important, and record any significant findings here.)*

26a. TYPED OR PRINTED NAME OF PHYSICIAN OR EXAMINER	26b. SIGNATURE	26c. DATE
---	----------------	-----------

Basic Health and Hygiene at Sea

Practice Good Hygiene

- Keep your hands clean by washing them frequently and thoroughly with soap and warm water or using an alcohol-based hand sanitizer. Hand-washing is the best way to avoid spreading germs.
- Keep cuts and scrapes clean and covered with a bandage and avoid contact with other people's wounds or bandages. Make sure cuts and scrapes stay as dry as possible.
- Do not share personal items such as washcloths, towels, or razors.
- Use gloves when handling fish, especially those with spines/sharp teeth.

Antibiotics

- Be smart about using antibiotics. Antibiotics **can** help treat bacterial infections but they **cannot** cure viral infections. Always ask your doctor if antibiotics are the best treatment and avoid pressuring your doctor into prescribing antibiotics when they won't help you get better.
- Always take all your antibiotic medicine as prescribed by your doctor. Using only part of the medicine can cause antibiotic-resistant bacteria to develop.
- Do not save any antibiotics and do not use antibiotics that were prescribed for someone else.

Sleep Deprivation

- Sleep deprivation is inevitable while working out at sea. Signs of sleep deprivation include:
 - Increased sleepiness and fatigue and weariness
 - Poor attention span and motivation, especially for boring tasks requiring sustained concentration (i.e.: tallying fish/hooks on a longline vessel)
 - Memory Lapses
 - Decreased initiative, judgment ability and decision making
 - Increased irritability
- Suggestions for Dealing with Sleep Deprivation:
 - Allow at least 4 hours of uninterrupted sleep each day to maintain minimal performance
 - Attempt frequent "power" naps - 20 or 90 minutes in length
 - Cover your eyes from natural light when attempting to rest
 - Avoid use of antihistamines, motion sickness medication, alcohol and all other drugs that will sedate (if possible)
 - Don't abuse caffeine – it will lead to an unavoidable "crash" later in the day
 - Eat small snacks of high carbohydrate foods (breads, rice, cereals, potatoes, some baked goods and apples). The carbohydrates will provide energy to fuel body function and prevent drowsiness.
 - Avoid large amounts of protein (meat, dairy items, eggs, fish, legumes). The body has to expend energy to break protein down.

Seasickness

- Seasickness often hampers observers at the beginning of a trip, but most effects of seasickness disappear after a few days.
- Vessel motion, indigestible stomach contents, unpleasant fumes or cooking smells, and anticipatory fear will trigger seasickness.
- The symptoms are nausea, headache, drowsiness, and depression. This is normal; it's just difficult to live with.
- Typically, serious cases can cause severe dehydration and weakness.
- To prevent this make yourself drink water or some non-acidic juice and try to eat some mild food (soda crackers are often recommended).
- Take some seasickness medication along even if you don't plan to use it.
- Scopolamine works very well for many people. Scopolamine is currently sold under two trade names, Transderm Scop (the "ear patches"), available only with a prescription, and Triptone, an oral, non-prescription form.
 - Some people cannot tolerate scopolamine's side effects, which include drowsiness, dry mouth, and headache.
- Dramamine (the trade name of Meclizine), Bonine and Cyclizine (trade name is Marezine) are the usual over-the-counter drugs which will inhibit vomiting.
- The USCG formerly used Meclizine with moderate success. USCG research "found that a combination of two drugs, promethazine hydrochloride (an antihistamine, trade name Phenergan), and ephedrine sulfate (a decongestant), was by far the most effective treatment available. Similar tests on Navy and Air Force personnel corroborated the Coast Guard's results.
- The recommended dosage is 25 mg of each drug one to two hours prior to motion stress and at six-hour intervals as needed thereafter.
- This combination of Promethazine hydrochloride and ephedrine sulfate is also known as the "Coast Guard Cocktail". Promethazine hydrochloride is a prescription drug, may cause drowsiness, and ephedrine sulfate may aggravate existing cases of hypertension.
- Neither drug can be taken within 12 hours after ingesting alcohol.
- None of the drugs mentioned here can be taken during pregnancy, and you should consult with your physician prior to taking any of these medications.
- It is recommended that you take one dose of a motion sickness medication as directed before you leave the dock since taking medication afterward will delay or nullify effectiveness.

First Aid Kits

- You are issued First Aid Kits that includes items to treat injuries and those for hygiene. First Aid Kits should ALWAYS be brought with you on the boat.
- Please add any personal items that you may need (prescriptions, extra seasickness medication, etc).
- Inform your coordinator if you run out of anything or have a request for something that is not in your kit
- First Aid Kit Inventory
 - Bandages
 - Gauze

- Medical tape
- CPR face shields
 - To be used when giving mouth to mouth Band-aids
- Iodine packs
 - Disinfectant, to clean wounds before bandaging
- Alcohol wipes
 - Disinfectant, to clean wounds before bandaging
- Triple antibiotic ointment
 - To minimize infection of wounds, treat before bandaging
- Hibiclens
 - Antiseptic/Anti-microbial soap
- Hydrocortizone cream
 - Anti-itch topical
- Dramamine
 - Seasickness medication
- Benadryl
 - For allergic reactions
- Sting relief
 - Topical sting relief
- Aspirin
 - Pain relief, slows the spread of MRSA
- Instant cold pack
 - For heat stroke, sprained joints
- Water-free hand sanitizer
 - If fresh water isn't available
- Baby wipes
 - If fresh water isn't available

IAP WORLD SERVICES, INC. NOAA PROJECT

Staphylococcus aureus

INTRODUCTION

IAP is committed to providing a work environment which promotes the health, safety and well-being of each and every employee. To this end, sound safety practices are essential and each employee of the company is charged with this responsibility. We recognize that some work environments present unique situations but we believe that with your help, we will find solutions that will result in safer work practices within conditions we have little control over.

TOPIC: *Staphylococci and associated infections*

WHAT IS A STAPH INFECTION?

Staph is the shortened name for *Staphylococcus*, a type of bacteria. These bacteria can live harmlessly on skin surfaces, especially around the nose, mouth and other warm moist areas. But when the skin is punctured or broken for any reason, staph bacteria can enter the wound and cause an infection.

The most common staph infection is *Staphylococcus aureus*. It causes skin infections like folliculitis, boils, impetigo, and cellulites that are limited to a small area of a person's skin. *S. aureus* can also release toxins that may lead to illnesses like food poisoning or toxic shock syndrome.

At one point in time, the *Staphylococcus aureus* bacteria was most common in hospitals and other institutional health care settings such as nursing homes. Recently, however, outbreaks have appeared increasingly in the community. More and more athletes are experiencing these infections due to having scrapes and cuts that are open.

HOW DO PEOPLE GET STAPH INFECTIONS?

In normally healthy people, most staph infections are minor skin infections. Staph infections can spread from person to person among those who live close together in group situations. Usually this happens when people with skin infections share things like bed linens, towels, or clothing. Warm, humid environments can contribute to staph infections, so excessive sweating can increase someone's chances of developing an infection.

Although it's very rare, infections caused by *S. aureus* can occasionally become serious. This happens when the bacteria move from a break in the skin into the bloodstream. This can lead to infections in other parts of the body, such as the lungs, bones, joints, heart, blood, and central nervous system. Staph infections in other parts of the body are less common than staph skin infections. They are more likely in people whose immune systems have been weakened by another disease.

WHAT ARE THE SIGNS OF A STAPH SKIN INFECTION?

Staph skin infections can show up in lots of different ways. Some of the more common conditions caused by *S. aureus* skin infections are:

- **Folliculitis** is an infection of the hair follicles, the tiny pockets under the skin where hair shafts grow. In folliculitis, tiny white-headed pimples appear at the base of hair shafts, sometimes with a small red area around each pimple. This occurs often where people shave or have irritated skin from rubbing against clothing.

- A **furuncle**, commonly known as a boil, is a swollen, red, painful lump in the skin, usually due to an infected hair follicle. The lump usually fills with pus, growing larger and more painful until it ruptures and drains. Furuncles are most frequently found on the face, neck, buttocks, armpits, and inner thighs, where small hairs can often be irritated. A cluster of several furuncles is called a carbuncle. A person with a carbuncle usually feels ill and feverish.
- **Impetigo** is a superficial skin infection. Most impetigo infections affect the face or extremities like the hands and feet. An impetigo skin infection begins as a tender, red bump that turns into a small blister or pimple, and then develops a honey-colored crust. Impetigo doesn't usually cause pain or fever, although the blisters may itch and can be spread to other parts of the body by scratching.
- **Cellulitis** is an infection involving areas of tissue below the skin surface. It begins as a small area of redness, pain, swelling, and warmth on the skin. As this area begins to spread, a person may feel feverish and ill. Cellulitis can affect any area of the body, but it's most common on the face or lower legs.
- A **hordeolum**, commonly known as a sty, is a staph infection of the eyelid. It develops when glands connected to the base of the eyelash become obstructed. A person with a sty will usually notice a red, warm, uncomfortable, and sometimes painful swelling near the edge of the eyelid.

Most of these staph infections are usually minor and can be treated by washing the skin with an antibacterial cleanser, applying an antibiotic ointment, and covering the skin with a clean dressing. If a minor infection gets worse – for example, you start feeling feverish or ill or the area spreads and gets very red and/or hot – it's a good idea to see a doctor.

Wound infections generally show up 2 or more days after the injury. The signs of a wound infection (redness, pain, swelling, and warmth) are similar to those found in cellulites. A wound infection may be accompanied by fever and a generally ill feeling. Pus or a cloudy fluid can drain from the wound and a yellow crust can develop.

PREVENTING STAPH SKIN INFECTIONS

Staphylococcus aureus bacteria are everywhere. Many healthy people carry staph bacteria without getting sick.

Cleanliness and good hygiene are the best way to protect yourself against getting staph and other infections. You can help prevent staph skin infections by washing your hands frequently. If water is in short supply, use waterless antibacterial cleaners.

Keep areas of skin that have been injured – such as cuts, scrapes, eczema, and rashes caused by allergic reactions clean and covered and use antibiotic ointments. Don't share towels, sheets, clothing, etc.

If you develop a staph infection, you can prevent spreading it to other parts of your body by being careful not to touch the infected skin, keeping it covered whenever possible, and using a towel only once when you clean the area – individual, disposable, antiseptic wipes would be preferable.

WHAT YOU NEED TO DO

- Wash your hands frequently. If soap and water are unavailable, use a waterless antibacterial cleaner.
- When working in an environment with perhaps more exposure to these bacteria than normal, one should prepare in advance. Identify areas that may be vulnerable to germs such as cuts, scrapes, eczema, and rashes. Clean the affected areas with antiseptic and apply an antibiotic ointment. Cover the area with a bandage.
- Use antibacterial soaps and cleansers whenever possible.
- Be vigilant and aware of any scrapes, cuts, and abrasions that may be vulnerable to the bacteria and make sure that area is cleaned and covered as soon as possible.

MRSA Staph Bacteria Superbugs: Prevention & Hygiene Tips

(Ron Jones, MS, ACSM Health/Fitness Instructor, Corporate Wellcoach)

Get Fit and Be Strong with “Proactive Wellness” to strengthen your immune system then follow the hygiene guidelines below!

Hand Washing: Thoroughly wash hands with anti-bacterial soap and small amount of water by *pressing and scrubbing soap into all areas of hands and fingers* for ≈20-30 seconds.

Hand Sanitizer & Wipes: Use “alcohol-based” hand rub like *Purell®* or equivalent. Thoroughly press sanitizer into *all areas* of hands and fingers. Antibacterial wipes can also be used when washing and sanitizer gels are not available. *Wet Ones®* make single-wipe packages for pocket or purse and pop-up canisters of wipes are also available, but do NOT kill MRSA. Make sure the wipes are approved for “human skin” and personal hygiene because some pop-up wipes are bleached based and intended for hard surfaces only which can be damaging to skin.

Cover Draining Wounds: An open and draining wound, or one covered with pus, is not only a portal of “exit” for transmitting MRSA to another person, but also a portal of “entry” for becoming infected with MRSA. Keep open and draining wounds covered and away from others!

Skin-to-Skin Contact: Avoid skin-to-skin contact with others that have open wounds. This is not always possible in sport settings such as football, wrestling, martial arts, and other combative activities which are even more reason to wash your body thoroughly as soon as possible after the skin-to-skin contact activities.

Cleaning & Irrigation of Skin: Beyond generous flushing with clean water and washing with antibacterial soap, topical antiseptics such as *Hibiclens® (chlorhexidine topical)* can be used to fight MRSA. *Chlorhexidine topicals* kill germs on skin and are used before surgeries with healthcare providers to reduce the risk of infections.

Sharing Personal Items: *Never share towels and razors!* MRSA infections have been caused in sport settings by sharing these personal items. Avoid sharing washcloths, clothing, or uniforms that have not been properly cleaned. Many athletes shave body parts like legs and chest even if they aren’t body builders. Shaving can create small openings in the skin leaving the person at-risk for infections when sharing a towel with a MRSA-infected teammate.

Clothing & Laundry: Wash clothes in question with detergent and HOT water (>140 degrees) then dry on HOT to further kill bacteria. Bleach can also be added as an extra precaution. It is recommended after visiting a clinical setting such as a hospital or nursing home, to change clothes immediately. Doctors are also being encouraged to begin wearing lab coats again as a protective skin barrier to MRSA and other infections.

- **Gyms & Exercise Equipment:** In addition to not sharing personal items like towels, many gyms now have special antibacterial solutions available in the form of sprays or towelettes. *Clini-Tech Spray®* is an EPA-registered and hospital-grade disinfectant (www.medtrol.com) that kills MRSA, HIV-1, Hepatitis C, and many other forms of infection. *Gym Wipes®* (www.gymwipes.com) are EPA-registered antibacterial disinfectant towelettes that kill 99.9% of germs. These are the products I’m using for my corporate clients, and both will decrease the risk of infection and cross contamination in your exercise setting. ***Make sure your gym has a hygiene process in place for dealing with MRSA infections and blood-borne pathogens.*** Many commercial gyms today still do not know what MRSA is or how to deal with it! ***Make sure to do YOUR part! Wear a shirt and wipe sweat off equipment when finished with your set! Insist that others do the same!***

* Ron Jones (2.13.07)



IAP WORLDWIDE SERVICES, INC

Sea-Going Safety Tips

May 2008

Staph Infections

Methicillin-Resistant Staphylococcus Aureus (MRSA) infection is caused by Staphylococcus aureus bacteria — often called "staph", which many healthy people carry on their skin and in their noses without getting sick. However, when skin is punctured or broken, staph bacteria can enter the wound and cause infections. Staph might begin as a small area of inflammation — tenderness, swelling, or redness on the skin's surface, or as an open skin sore or ulcer. According to the Mayo Clinic, the bacteria usually causes no problems or relatively minor skin infections, but can turn deadly if the bacteria burrow deeper into your body, invading your bloodstream, urinary tract, lungs and heart. Decades ago, the MRSA strain of staph emerged that was resistant to the broad-spectrum antibiotics commonly used to treat it. It was one of the first germs to outwit all but the most powerful drugs.

MRSA in the community is associated with recent antibiotic use, sharing contaminated items, having active skin diseases, and living in crowded settings. The U.S. Centers for Disease Control and Prevention (CDC) estimates that about 12% of MRSA infections are now community-associated, but this percentage can vary by community.

The transmission of MRSA is largely from people with active MRSA skin infections. MRSA is almost always spread by direct physical contact and not through the air. Spread may also occur through indirect contact by touching objects (such as towels, sheets, wound dressings, clothes, workout areas, sports equipment) contaminated by the infected skin of a person with MRSA.

Keep personal hygiene at its best AT ALL TIMES - staph can be contracted from any location - not just at sea.

Ways to Prevent Staph Infection

- Keep personal hygiene at its best at all times — Staph can be contracted from any location
- Check to make sure you have plenty of Hibiclens, Antibacterial wipes, and Germ-X to last while you are deployed
- Clean hands before, after and during every task as needed
- Ensure nails are trimmed to the quick — nails should not extend past the tip of the fingers
- Keep clothing and sleeping gear clean
- Wear proper PPE at all times
- Keep all cuts, scrapes or open wounds clean and covered to avoid infection (Use any antibiotic ointments or other treatments that your doctor suggests)
- Avoid contact with other people's wounds or bandages
- Properly clean gear and equipment
- Avoid sharing personal items
- Drink eight to ten glasses of water a day. The best way to flush or rid the body of disease-causing bacteria is to drink plenty of fluids.

**Cleanliness and Good Hygiene
are the best ways to protect yourself from getting Staph!**

Parents, school administrators, coaches, and kids need to be aware of the growing problem of antibiotic resistant germs including MRSA because it spreads easily from person to person.

MRSA can be prevented but awareness is the first step to protecting yourself.



**TREAT AND
COVER WOUNDS**



**PROPERLY CLEAN
GEAR AND
EQUIPMENT**



**DON'T SHARE
PERSONAL ITEMS
(LIKE TOWELS)**



**KEEP HANDS
CLEAN**



**SHOWER AFTER
PHYSICAL ACTIVITY**



**CONSULT YOUR
TRAINER/PHYSICIAN FOR
ALL ACTIVE WOUNDS**

WHAT IS STAPHYLOCOCCUS AUREUS (STAPH)?

Staphylococcus aureus, referred to commonly as "staph" are bacteria commonly carried on the skin or in the nose of healthy people. Approximately 30%-50% of the population is colonized (when bacteria are present, but not causing an infection) in the nose with staph bacteria. Sometimes, staph can cause skin infection. Historically, staph infections occurred among persons in hospitals and healthcare facilities but now they are rapidly spreading into the general population and are easily spread from person to person.

WHAT IS MRSA (METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS)?

Some staph bacteria have mutated and cannot be killed with commonly used antibiotics. MRSA is a type of staph that is resistant to antibiotics including methicillin and other more common antibiotics such as penicillin and amoxicillin. Millions of people are colonized with MRSA in the U.S. alone and infections are appearing at epidemic rates. MRSA infections are commonly mistaken as spider bites.

WHAT IS COMMUNITY-ACQUIRED MRSA (CA-MRSA)?

Staph and MRSA can cause illness in persons outside of hospitals and healthcare facilities. MRSA infections acquired by persons who have not been recently hospitalized, or had a medical procedure, are known as CA-MRSA infections. Staph or MRSA infections in the community are usually manifested as skin infections, such as pimples and boils, and occur in otherwise healthy people.

WHAT DOES A STAPH OR MRSA INFECTION LOOK LIKE?

Staph bacteria, including MRSA, can cause skin infections that may look like a pimple, boil or ingrown hair and can be red, swollen, painful, or have pus and other drainage. Many occur in the armpits, neck, groin and buttocks where bacteria grow. More serious infections may cause pneumonia, bloodstream infections, or even death.

WHAT SHOULD I DO IF I THINK I HAVE A STAPH OR MRSA INFECTION?

Contact your healthcare provider immediately. Make sure you ask to have your wounds cultured for MRSA.

HOW IS MRSA SPREAD?

Any open wound is a potential entry point for MRSA. Factors that have been associated with the spread of MRSA skin infections include: close skin to skin contact, openings in the skin such as cuts or abrasions, contaminated items and surfaces, crowded living conditions, and poor hygiene.

Kids playing sports are at greater risk because they share equipment and have skin contact which are both common causes of infections.

HOW CAN I PREVENT STAPH OR MRSA SKIN INFECTIONS?

Practice good hygiene including:

- ✓ Keep your hands clean
- ✓ Treat cuts and scrapes with StaphAseptic First Aid Antiseptic / Pain Relieving Gel
- ✓ Keep cuts and scrapes clean and covered with a bandage until healed
- ✓ Shower after physical activity
- ✓ Properly clean gear and equipment
- ✓ Consult your trainer/physician for all active wounds
- ✓ Avoid contact with other people's wounds or bandages
- ✓ Avoid sharing personal items such as towels or razors

ARE STAPH AND MRSA INFECTIONS TREATABLE?

Yes. Most staph and MRSA infections are treatable by intravenous antibiotics or by draining the abscess or boil. Draining of skin abscesses or boils should only be done by a healthcare provider. Casual use of antibiotics should be discouraged and can lead to a lack of effectiveness.

IS IT POSSIBLE THAT MY STAPH OR MRSA SKIN INFECTION WILL COME BACK AFTER IT IS CURED?

Yes, it is possible for a staph or MRSA skin infection to come back after it is cured. To avoid this, follow your healthcare provider's directions while you have the infection, and follow the prevention steps after the infection is gone.

IF I HAVE A STAPH OR MRSA SKIN INFECTION WHAT CAN I DO TO PREVENT OTHERS FROM GETTING INFECTED?

- ✓ Cover your wound with clean, dry bandages and follow your healthcare provider's instructions on how to take care of the wound.
- ✓ Clean your hands frequently.
- ✓ Do not share personal items such as towels, washcloths, razors or clothing that may have had contact with the infected wound or bandage.
- ✓ Talk to your doctor.

WHY USE STAPHASEPTIC INSTEAD OF A TRIPLE ANTIBIOTIC?

- ✓ StaphAseptic kills 99.9% of antibiotic resistant staph (MRSA).* Topical triple antibiotics have not been found to be effective against MRSA.
- ✓ Public health experts are concerned about antibiotic resistance, a problem that can develop when antibiotics are overused. Over time, germs develop new defenses against antibiotics that once were effective against them. Bacteria reproduce quickly and pass these defenses rapidly from one generation to the next until almost all are immune to the effects of a particular antibiotic. This process appears to be happening faster than new antibiotics can be developed.
- ✓ Roughly 5%–10% of people may be allergic to one or more ingredients in topical antibiotic products.

**In vitro studies show that StaphAseptic kills over 99.9% of methicillin resistant staphylococcus aureus (MRSA).*



Incident Report Form

The injured individual shall complete this report on the date of the incident. If the individual is unable to personally complete the form due to injury, their immediate supervisor may complete it for them. However, every attempt must be made to secure the information directly from the individual and transcribe the narrative portions in their exact words. All questions must be answered.

The individual must sign the report unless physically unable.

TO BE COMPLETED BY THE INJURED INDIVIDUAL

NAME (First Mi Last)		SSN	INCIDENT DATE (mm/dd/yyyy)	INCIDENT TIME (HH:mm)	
STREET ADDRESS			CITY	STATE	ZIP
HOME PHONE ()-	WORK PHONE ()-	BIRTH DT (mm/dd/yyyy)	SEX <input type="checkbox"/> Male <input type="checkbox"/> Female		NUMBER OF DEPENDENTS
MARITAL STATUS <input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Separated <input type="checkbox"/> Divorced		DATE RPT TO MGT (M/d/yyyy)	REPORTED TO (last name & phone) ()-		
INDIVIDUAL'S JOB TITLE		INDIVIDUAL'S WORK SECTION/AREA	SUPERVISOR (last name)		

What was the exact nature of your injury? *(the type and extent of injury and exact part of body affected)*

How did the incident occur? *(give full details on what you were doing and what happened)*

What was the cause of the incident? *(explain in detail)*

How could future incidents of type be prevented?

Were you trained and knowledgeable in the task being performed when the incident happened? ☐ Yes ☐ No *(if no, explain)*

Was there a witness to the incident? ☐ Yes ☐ No If yes, give witness name:

NOTE: Any person who willfully makes any false or misleading statements or representation for the purpose of obtaining any benefit or payment under Workers' Compensation is guilty of a crime and may face criminal prosecution and/or termination of employment.

I HEREBY CERTIFY THAT THIS INJURY/ILLNESS OCCURRED FROM, AND DURING, A WORK RELATED ACTIVITY AND THAT THE INFORMATION AND DESCRIPTION COMPLETED BY ME ABOVE IS ACCURATE AND TRUE. I ALSO AUTHORIZE RELEASE OF ALL MEDICAL INFORMATION RELATED TO THIS CLAIM TO THE COMPANY AND THEIR INSURANCE CARRIER

Signature

Date



Incident Witness Report Form

Each witness to incidents that involve Company personnel should complete a separate copy of this report immediately following the incident. It is important that the identification information be accurate so the witness can be contacted in the future if required. Please answer all questions.

WITNESS IDENTIFICATION (please print or type)

NAME (first Mi last)	INCIDENT DT (mm/dd/yyyy)	INCIDENT TIME (hh:mm)
COMPANY NAME/DIVISION/OFFICE		WORK PHONE ()-
COMPANY ADDRESS/WORK LOCATION		

INCIDENT INFORMATION (please print or type)

What was the location of the incident? *(give accurate description of where the accident happened)*

In your own words, give a detailed description of what you saw.

What do you believe was the cause of the incident? *(explain in detail)*

How do you think future incidents of this type could be prevented?

NOTE: Any person who willfully makes any false or misleading statements or representation for the purpose of obtaining any benefit or payment under Workers' Compensation, either for themselves or for another person, is guilty of a crime and may face criminal prosecution and/or termination of employment.

I CERTIFY THAT THE INFORMATION AND DESCRIPTION COMPLETED BY ME ABOVE IS ACCURATE AND TRUE

Signature

Date

Before Deployment on Vessel

The Commercial Industry Vessel Safety Act of 1988 required the U.S. Coast Guard (USCG) to issue regulations that require certain equipment, instructions and drills aboard vessels that operate beyond the boundary line (COLREGS) or carry more than sixteen individuals. Equipment, instructions and drills all increase your safety. Your assigned vessel almost certainly operates beyond the COLREGS line (an imaginary line drawn from points of lands, or closes passes, bays and inlets). These regulations are published in the Code of Federal Regulations (CFR), with most contained in 46 CFR. These safety regulations are outlined in the publication Federal Requirements for Commercial Fishing Industry Vessels. Specific regulations vary, depending on the type and length of vessel, location of fishing operations, seasonal conditions and other factors.

When you board a vessel, safety regulations mandate the captain to make sure you receive a safety orientation. This may be as simple as showing you around, but may include watching videos, or conducting drills. There are some important items that you need to be familiar with while on board any vessel. Check these things before you leave the dock. Aboard fishing vessels, a life-threatening emergency is possible at any time.

By law, vessels selected for participation in fishery evaluations projects that carry observers must have a current USCG safety inspection decal. The policy regarding vessel selection or rejection for participation in the observer program, whether the program is mandatory or voluntary, is as follows:

1. **You will not sail aboard a vessel, unless a current USCG safety decal** is displayed in the starboard window of the wheelhouse of the vessel. This is the law.
2. **Before** the vessel leaves the dock, you need to fill out the safety check off list to determine whether the minimum safety equipment is onboard. Do this before the vessel gets underway because you could find yourself the fifth person on a vessel with a four-man life raft.

If you determine that the vessel does not comply with the minimum safety equipment requirements, or for any other reason consider the vessel unsafe in a pre-boarding survey, do not board, and immediately contact the Observer Coordinator.

3. Once you have completed your check off list, orient yourself with the vessel. Become familiar with other safety features of the vessel such as the station bill, and location of any other safety equipment (radio, first aid kit). Identify any potential hazards before the vessel departs. Memorize the exit route from your cabin, the galley, and other locations where you may spend a fair amount of time.

*** The following are examples of things that you should/could check while doing a vessel walk through. They are listed here to assist you when determining the relative safety of a particular vessel. It is not a comprehensive list but one that is intended to start you thinking***

- Does the vessel seem well maintained? Is it neat, clean and being run by a crew that is careful and prepared?
 - Any visible hydraulic leaks?
 - Is the vessel being used for the purpose it was originally designed? Have significant changes been made?
 - Do obvious hazards exist? Note potentially hazardous areas/conditions.
 - Identify the watertight doors (interior and exterior). Can they be secured in case of heavy weather or emergencies?
 - Are any hatches or passageways blocked or difficult to get to?
 - Does deck gear appear to be in good working order and are there safety concerns with the setup? Are there wires that run overhead? Are shackles and blocks worn excessively?
 - Is vessel overdue for a haul-out (excessive growth at waterline or hull paint in poor condition)?
 - How often is the bilge pump going on?
 - How high off of the deck is the fish hold hatch and is it in good condition? Are there any other openings on deck and are they covered with hatches?
 - Would anything prevent you from abandoning ship from the living quarters?
 - What are the escape routes from every part of the vessel you might find yourself? Visualize egress for all possible scenarios (fire, flooding, capsized, dark, etc.) and mentally note landmarks.
 - What are the most combustible items on board and where are they stored?
 - Are there any exposed exhaust pipes/manifolds that might pose burn hazards?
 - While you are at sea note the roll period. Generally a boat with a quick, snappy roll is more stable than a boat that has a slow or sluggish roll period. A boat that seems to hesitate on its side before righting could be unstable.
 - Does the vessel list excessively?
 - Is there heavy equipment on deck that is not lashed down?
 - Are there any exposed drive chains, pulleys or belts?
 - Where is the life raft located? Would it be hard to get to if conditions were icy or the house was on fire?
 - Are there rust stains between wood planks? Do any planks protrude or are there inconsistencies in the hull? Is wood rot present? Remember, if you can see wood rot it is likely worse in areas that you can't see.
 - Are there safety issues involved with boarding?
 - Is there a sufficient amount of scuppers and are they large enough to be effective? Do they become plugged during fishing operations?
 - Is there a station bill posted and is your role clear during all shipboard emergencies?
- Did the captain give a safety orientation, explaining:
- Survival craft embarkation stations and assignments
 - Fire/emergency/abandon ship signals
 - Procedures for rough weather/sea
 - Procedures for recovering person overboard
 - Procedures for fighting a fire
 - Essential actions required of each person in an emergency?

WHEN WAS THE LAST TIME YOU CHECKED YOUR PERSONAL SAFETY EQUIPMENT ??????



Thirteenth Coast Guard District
Commercial Fishing Vessel Safety

Ready for Sea Checklist



- ☐ **Weather:** Evaluated weather forecast & bar conditions. Vessel & crew can handle safely! Can monitor weather reports at sea.
- ☐ **Crew:** Trained & drilled in operation of vessel & safety equipment. Work schedule minimizes fatigue.
- ☐ **Stability:** Scuppers & freeing ports clear. Gear, catch & hatches secured. Vessel not overloaded.
- ☐ **EPIRB & Communications:** Equipment tested. EPIRB armed & mounted properly. Back up communications ready to go.
- ☐ **Immersion Suits:** Crew has donned suits to ensure proper fit & good condition. Suits accessible & lights attached.
- ☐ **Survival Craft:** Capacity for entire crew. Serviced, properly installed, & crew trained to launch.
- ☐ **PFDs Worn on Deck:** Crew knows to wear PFDs or inflatable suspenders when working on deck.
- ☐ **Damage Control:** Bilge pumps work. Damage control equipment on board & crew trained in use.
- ☐ **Fire Fighting:** Adequate number of serviced fire extinguishers on board & crew trained in fire fighting.
- ☐ **Safety Exam:** I conducted "Ready for Sea" deck walk/safety inspection & determined vessel safe to sail.

[Amplifying Details on Reverse Side](#)

Ready for Sea Safety Factors



WEATHER

- ☐ Weather checked and evaluated. Vessel and crew can handle conditions.
- ☐ Operable weather forecast comms equipment on board. Forecasts monitored.

CREW

- ☐ Drills conducted with every person on board (monthly).
- ☐ Work scheduled to minimize fatigue.
- ☐ Experienced crewmember checked & corrected deck/pot/fishing hazards.
- ☐ Crew knows where the safety gear is and how to use it.

STABILITY/OVERLOADING

- ☐ Hatches operable and secured to ensure the vessel is watertight.
- ☐ Freeing ports unblocked to allow free flow of water off deck.
- ☐ Deck loads & bait shacks properly secured so that they won't break loose.
- ☐ Bin boards in place to keep the load from shifting.
- ☐ Vessel tanked to reduce free surface effect (fuel, water and catch not freely moving in tank).
- ☐ Stability book up-to-date and vessel operated in accordance with guidelines.

EPIRBs & COMMUNICATIONS EQUIPMENT

- ☐ 406 MHz EPIRB tested within past 30 days, properly mounted and in the ARMED position.
- ☐ Communications equipment operable and adequate for voyage.
- ☐ Every person on board knows how to make a distress call and the frequencies to be used.
- ☐ Emergency power for communications equipment and/or back up handheld VHF radio on board.

IMMERSION SUITS

- ☐ One for every person on board. Stowed in readily accessible location.
- ☐ Each person donned to ensure proper fit and able to quickly don in an emergency.
- ☐ Suits serviceable--zippers waxed and operable, inflation bladder & lights attached.

SURVIVAL CRAFT

- ☐ Large enough to carry every person on board.
- ☐ If craft is a liferaft, serviced within the past 12 months.
- ☐ Every person on board knows how to launch the survival craft.
- ☐ Properly installed so it will deploy in an emergency.

PFD/WORK VEST

- ☐ Crewmembers wear flotation [suspenders, float coats, etc.] when on deck in hazardous condition.
- ☐ Personal marker lights [strobe, fixed bright, etc] attached to the flotation devices.

DAMAGE CONTROL

- ☐ Damage control kits with plugs, wedges, etc. on board and crew trained in use.
- ☐ High water alarms operable. Bilge pumps adequate and operable.
- ☐ Shaft and rudder post(s) checked to ensure no or only minimal leakage.

FIRE FIGHTING

- ☐ Adequate number of serviceable fire extinguishers on board.
- ☐ Crewmembers trained to extinguish a shipboard fire.

SAFETY EXAM

- ☐ Vessel examined by a Coast Guard dockside examiner or third party organization to ensure vessel is **READY FOR SEA!!!**
- ☐ Pre-sail **READY FOR SEA** exam conducted.
- ☐ Safety deficiencies corrected and vessel safe to sail.

Commercial Fishing Vessel Safety EXAMINATION

VESSEL

- ☐ Documented
☐ Undocumented

OPERATIONS

- ☐ Cold Waters
☐ Warm Waters
☐ Inside Boundary Line
☐ Beyond Boundary Line

FROM COASTLINE

- ☐ < 3 NM
☐ < 12 NM
☐ < 20 NM
☐ < 50 NM
☐ > 50 NM
☐ > 100 NM



THIS VESSEL MEETS ALL
USCG COMMERCIAL
FISHING INDUSTRY
VESSEL REGULATIONS
FOR OPERATING
AREAS AS MARKED

NO.

EXPIRES

- 2014 ☐
2015 ☐
2016 ☐
2017 ☐

JAN	JUL
FEB	AUG
MAR	SEP
APR	OCT
MAY	NOV
JUN	DEC

CG-5587A
(Rev. 6/08)

U.S. Department of Homeland Security

PRESS RELEASE 2008-12-16

CM HAMMAR, GÖTEBORG, SWEDEN

SAFETY ALERT – DANGEROUS H2O FAKE COPIES!

It has recently come to our attention that someone is producing fake copies of our Hydrostatic Release Unit, the Hammar H2O. To an untrained eye, the copy is almost identical to the original product, with Hammar's logo and address on the labels. The fake might look almost like the original product, but there is one very important difference: **the copy does not work!**

We have tested several of the copies. Not a single one of them worked properly according to SOLAS' specification – **the fake H2O will definitely not release a life raft or an Epirb**. We see this as a very serious situation. There can be a number of ships at sea that are sailing with fake Hydrostatic Release Units. If any of these ships were to sink, there will definitely be no life rafts or Epirbs that will help to rescue the seafarers in danger!

How can you quickly check that you have the original Hammar H2O?

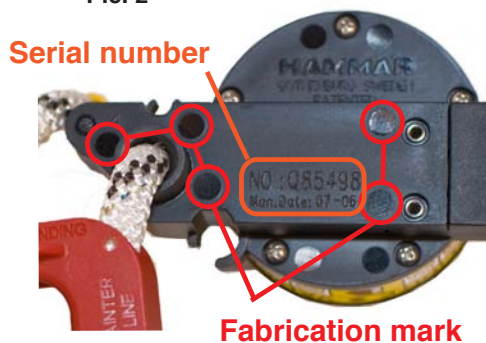
- Always purchase your products through approved distributors or authorised service points for life rafts and Epirbs
- Make sure that you receive the Hammar multilingual product manual and a raft label with each unit for life raft H2O or Hammar marking instruction for Epirb H2O. (Pic 1)
- If you check on the underside of the Hammar H2O you should be able to find 5 (five) fabrication marks on all units produced since April 2006. Units produced before that date have only 2 (two) fabrication marks. (Pic 2)
- The serial number and production date can always be verified by contacting CM Hammar at info@cmhammar.com. (Pic 2)
- The fabrication mark on the upper side of the unit must always point directly towards the rope. (Pic 3)

Pic. 1



H2O unit with the multilingual product manual and raft label

Pic. 2



Fabrication mark

Pic. 3



Fabrication mark

If you have any questions regarding this matter please contact us.

HAMMAR®

Jan Calvert
Sales & Marketing Director

jan.c@cmhammar.com
Direct +46 31 709 65 61
Cell +46 708 49 92 60
www.cmhammar.com

Safety Aboard Vessels

The following points must be adhered to while on every vessel:

1. A personal flotation device (PFD) is recommended when out on the deck, regardless of the weather conditions.

2. Don't run aboard ships, particularly up or down stairwells. Slipping, tripping, and falling are the most common sources of observer injury. These accidents often happen when an observer is in a hurry. Specifically watch out for slick spots where the deck is wet or oily, step carefully over the half-foot combing rising from the bottom of metal latch doors and passageways, and look out for low overheads in vessel stairwells and watertight doors. Don't descend ladders as if they were stairs.

2. When rough sea conditions severely limit the effectiveness of sampling, refrain from conducting observations and document the weather and sea conditions during these periods in your logbook. When outside, attempt to remain in view of others. During rough weather, it is important to keep one hand holding on to something secure at all times to prevent you from falling overboard, into the fish hold or slipping and hurting yourself.

3. When conducting nighttime sampling, always let someone else know that you are going out on deck. Never conduct monitoring from an area that you consider unsafe.

4. Cables and lines that break under strain can be a serious hazard. Whenever a line or cable is subjected to tension, stand in a place where a backlash would not hit you. Watch out for loose or swinging rigging and exposed machinery.

5. Always wear gloves when handling fish.

-Be cautious whenever handling fish since fish spines (especially hardhead catfish) can penetrate boots and gloves and cause a painful wound. Remember that sharks may appear dead, but are still able to bite.

-There may be times when there are many large fish (e.g. swordfish, tunas or sharks) on deck. Large specimens present a danger even when dead. They may slide across the deck in heavy weather and cause serious injuries. Large live fish can cause injury with their teeth, tails and bills. Big tunas have broken boards with a smack of the tail. An ankle or foot bone could easily be broken or injured by such a hit. Experienced fishermen treat certain species (e.g. Shortfin Mako) with a lot of respect, and so should you.

-Be careful not to strain yourself when moving specimens. Ask for help when moving large animals.

-When using a knife on the deck, take care when handling it. Knives on fishing boats are not sterile. Maintain sure footing when using a knife, always cut away from your body and don't leave it lying around on the deck where someone may be injured.

-Treat all minor cuts especially those on hands, with antiseptic to avoid infection. After handling fish, wash hands thoroughly with hot water and soap or an antiseptic such as betadine or providone iodine (1-2 oz. per qt. of water).

6. It is important to keep a clear head at all times on these boats. Avoid alcohol and drugs (and other intoxicating substances) because they impair your reflexes and clear thinking. Keeping a clear head will enable you to foresee potential hazardous situations.

****If you go on deck at night, notify the person on watch****

****When working on the deck, be aware of your surroundings****

****Always keep one hand for yourself and one hand for the ship****

Southeast Fisheries Observer Programs - Panama City**Pre-Trip Safety Check**

OBS TRIP ID _____

DATE _____

VESSEL NAME _____

VESSEL # _____

Life Saving Equipment (circle Y for yes or N for no)**CGVSE**Safety Examination Decal? **Y / N**

Decal # _____

Date of Expiration: ____ / ____

Vessel Distance Rating: ____ NM

**EPIRB**EPIRB present? **Y / N**EPIRB Category: **I / II**Stowed in a float-free location? **Y / N**

EPIRB Registration Expiration Date: ____/____

Registered To: _____

Hydrostatic Release Exp. Date: ____ / ____ / **NA**

Battery Expiration Date: ____ / ____

FLARES

3 of any flare required for operations <3nm offshore

3 Parachute, 6 Hand & 3 Smoke required for operations >3nm offshore

Record flare expiration dates:

Hand: ____ / ____ Hand: ____ / ____ Smoke: ____ / ____ Parachute: ____ / ____

Hand: ____ / ____ Hand: ____ / ____ Smoke: ____ / ____ Parachute: ____ / ____

Hand: ____ / ____ Hand: ____ / ____ Smoke: ____ / ____ Parachute: ____ / ____

PFDs AND IMMERSION SUITS (not including observer equipment)Personal Floatation Device for each **POB**? **Y / N**

of PFDs _____

Immersion suit for each **POB**? **Y / N**

of Immersion Suits _____

*required in federal waters above 32 N latitude

FIRE FIGHTING EQUIPMENT

Vessels <26 ft require 1 B-I unless equipped with an outboard in certain conditions

Vessels >26 ft but <40 ft require 2 B-I or 1 B-II

Vessels >40 ft but <65 ft require 3 B-I or 1 B-II & 1 B-I

	Location	Type	Service Date
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____

STATION BILLS posted? Y / N

ONBOARD DRILLS logged? Y / N

LIFE RAFTS AND RINGS

Orange ring buoy with line attached? Y / N

Rigid life float? Y / N (>12nm but <20nm until 2015)

Inflatable life raft? Y / N

Capacity for all **POB**? Y / N

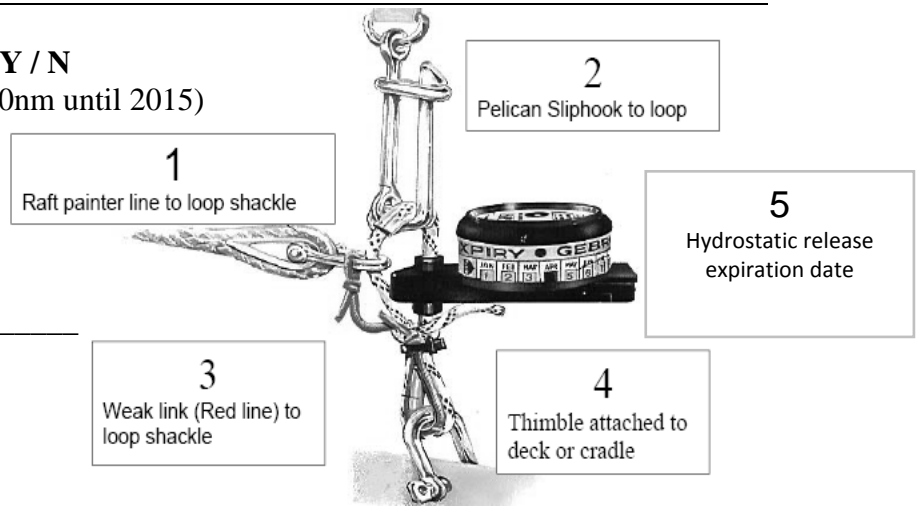
Life raft Capacity _____

Raft Repack Date ____ / ____ / ____

Hydrostatic Release Exp. Date: ____ / ____ / ____

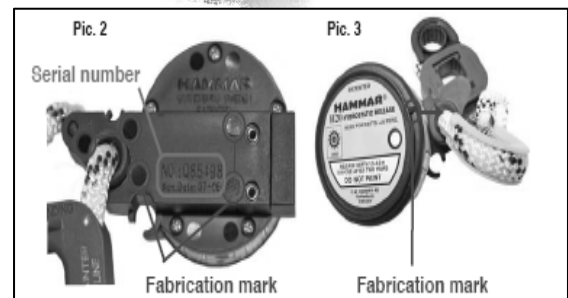
Life raft configured correctly*? Y / N

*Please take picture of configuration



5 Fabrication Marks Present? Y / N

Upper Fabrication mark towards rope? Y / N



Please provide signatures to verify that a safety check was conducted and that the information above is accurate.

Observer: _____ Date: ____ / ____ / ____

Owner/Operator: _____ Date: ____ / ____ / ____

Emergency Drills Requirement

Documented fishing vessels of any crew size beyond the Boundary Line, or vessels with more than sixteen people on board within the Line, are required to conduct monthly emergency drills. Drills must be conducted by a trained Drill Instructor.

What to cover in monthly drills:

1. Abandoning vessel.
2. Fighting a fire.
3. Retrieving person overboard.
4. Minimizing flooding.
5. Launching/recovering lifeboats/rescue craft.
6. Donning immersion suits/PFDs.
7. Donning SCBAs (if so equipped).
8. Giving a mayday and using visual distress signals.
9. Activating the general alarm.
10. Reporting inoperative alarms.

For Drill Instructor training in your port contact AMSEA at (907) 747-3287 or check out AMSEA's website at www.amsea.org.

Credits:
Alaska Marine Safety Education Association (AMSEA); National Institute of Occupational Safety & Health (NIOSH); U.S. Coast Guard.

Injury data is from the Alaska Trauma Registry 1991–1998. Data from the Alaska Fishermen's Fund is from 1994–1998.

Seven Ways to Get Hurt (or Killed) While Commercial Fishing in Alaska



Photo: Art French, M.D., USCG

... and ideas from fishermen on how to prevent them

- Commercial fishing can be rewarding and satisfying but it also has hazards. From 1994 to 1998, Fishermen's Fund reported 4,264 injuries and 70 lives lost in Alaska.
- Enclosed are some ways injuries and fatalities can be prevented.
- Review with your crew before and during the season.

1. Strains/Sprains

STATISTIC

Strains and sprains accounted for 47% of all Fishermen's Fund reported injuries.

PREVENTION TIPS

- Use tools to reach and rake in fish. (Petersburg seiner)
- Do stretching exercises in off season and while on watch or off duty.
- Work with fish as much as possible at a level where bending over is not necessary.
- Try to get in shape before the season.
- Use mats or grates to boost you to the right height at cleaning tables so your arms work in a neutral position. (F/V Capt. Cook)
- Get help with items too heavy to lift or move by yourself, especially when underway. Work together. (F/V Ocean Cape)



2. Machinery

STATISTIC

The largest single cause of injuries was machinery (43%).

PREVENTION TIPS

- Shut off engine/motors when working on them to prevent getting snagged.
- Run a line to a kill switch (Henderson line) where it is accessible but out of the way, so anyone on deck can reach it to shut off hydraulics. (F/V Commander)

- Limit hydraulics to safe working loads by installing relief valves. (F/V Commander)
- Don't impulsively grab at lines going out until you're aware of any hazards. (F/V Commander)
- Never use picking hooks in engine control box as they can jam boat in gear and cause collisions. (F/V Amber J)
- Wear no buckles or buttons to catch on gear. (Bristol Bay fisherman)
- Instead of wearing a net-mending knife on a piece of twine around your neck, tie it off to a belt loop. Better to tear your pants than get lynched by the seine block. (F/V Capt. Cook)

3. Falls

STATISTIC

The second leading cause of injuries was falls (34%).

PREVENTION TIPS

- Use abrasive cleanser on slick engine room surfaces. (F/V Capt. Cook)
- Good housekeeping! Keep kelp and slime off decks.
- Use rock grit or coarse sand for hydraulic leaks on deck. (Maine fisherman)
- Use absorbent pads under hydraulic leaks until fixed. (F/V Ocean Cape)
- Hang lines with monkey fists from overheads to hold onto in rough weather. (F/V Coral Lee)
- Renew worn nonskid paint on decks and in skiffs. (Bristol Bay fisherman)
- Put nonskid surface on ladder rungs and steep stairs. Use nonskid grates or mats in high risk areas.

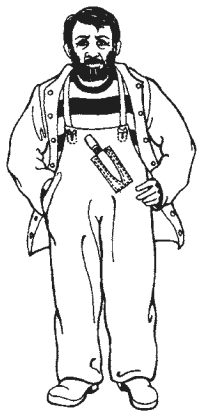
4. Cuts and Punctures

STATISTIC

Cuts and punctures accounted for 26% of all Fishermen’s Fund reported injuries.

PREVENTION TIPS

- Wear protective gloves and gear.
- Tape those sharp little Victorinox® knives horizontally to belt, instead of vertically, to prevent leg punctures. (Kodiak fisherman)
- To minimize infections, do dishes and/or soak in hot soapy water several times a day to clean out puncture wounds from fish or shrimp. (F/V Capt. Cook)
- If wound looks infected, wash with Betadine™, soak half hour in hot soapy water as soon as possible, then dry and bandage. Monitor closely for spreading infection.
- Replace any wire rope that develops “fish hooks”. (F/V Capt. Cook)
- If you keep getting poked by your net-mending knife, round off the tip. (F/V Capt. Cook)
- Always wear safety glasses when grinding and using power tools. (F/V Predator)



5. Falling Overboard

STATISTIC

About 25% of fatalities are due to falls overboard._

PREVENTION TIPS

- Wear inflatable suspenders or vest when working on deck. Some inflatables have automatic inflation devices.
- Do not go on deck alone at night or in rough weather. If need arises, have a spotter. Wear a PFD and Man Over-board alarm. (Petersburg fisherman)
- When fishing alone, drag a line behind the boat attached to a kill switch. (F/V Troubadour - S.E. Alaska troller)
- On seiners, leave purse line in net, not on deck where it will run across deck when the net is going out. (F/V Commander)
- Install rear-view mirrors on deck to see people in stern. (S.E. Alaska longliner/gillnetter)
- Rig up man overboard rescue devices ahead of time, using the boat’s hydraulics to do heavy lifting. (F/V Amber J)
- Wear an accessible knife to cut yourself from lines/webbing and to cut bottom of waders to empty water when climbing back onboard. (F/V Laconnu)
- Always carry a serrated knife you can access and use with one hand. (F/V Capt. Cook)

6. Struck by Objects

STATISTIC

23% of injuries are due to being struck by objects.

PREVENTION TIPS

- Rig extra safety chains or stays on boom, side stays and power block as preventors.
- Keep a sharp knife on a pole to cut hung up lines that are under tension to keep you out of the line of tension. (F/V Trident)
- Avoid pinched toes by painting bright yellow stripes around pot launchers and rigging “preventors” so launchers don’t go all the way to the deck. (F/V Ocean Cape)

7. Bruises/Contusions

STATISTIC

Bruises and contusions account for 13% of all Fishermen’s Fund reported injuries.

PREVENTION TIPS

- When crabbing, traditional Type III USCG approved lifevests will provide some protection from pots. (Dutch Harbor fisherman)
- Wear hard hats when working with overhead gear.
- Paint hazard areas bright yellow.
- Use duct tape and foam rubber to soften tight quarters or places that cannot be avoided by tall people.

Other Good Practices

- Safety orientations covering emergency gear and procedures should be given to all new crew before leaving harbor.
- Seiners: develop ways to get fish out of net without having to lift entire net. Use wedges, straps, etc., to roll part of the net in to minimize stress on rigging and reduce center of gravity from block to increase stability. (F/V Commander)
- Use double hose clamps on all plumbing, including the deck hose outlet. (F/V Greta)
- Train crew in basic vessel operations such as navigation and anchoring. (F/V Greta)
- Have a sea anchor.
- In a rough anchorage use a fifty pound weight near anchor (a kellet or sentinel) and a surge buoy fifteen fathoms from bow. (Ketchikan fisherman)
- Keep all work areas well illuminated at night.
- Develop safety procedures and be open to ways to minimize risks.

Got deck safety ideas you’d like to share?
Submit them to AMSEA!

Alaska Marine Safety Education Association

www.amsea.org



Table 1. Typical field and/or fisheries related injuries. Always seek medical attention when afflicted or caring for an afflicted person.

Type of Injury	Injury	Characteristics
Flesh Wounds	Scrapes and Abrasions	Usually does not penetrate skin, slow bleeding
	Cuts	Blood is dark red, flows at a steady pace, can be life-threatening
	Puncture Wounds	Blood is bright red, flows very rapidly. If major artery is punctured, treat immediately
Skeletal	Sprained Joints and Dislocations	Range from aching to severe pain. Dislocations show signs of deformity, swelling, discoloration, pain, inability to move injured area, and can emit a grating sound.
	Broken Bones	Deformity, swelling, discoloration, grating sound, pain, inability to move area, exposed bone in the case of compound fracture
	Head and Neck	Change in consciousness, breathing difficulty, impaired vision, inability to move body part, headache, vomiting, loss of balance, tingling in hands, fingers, feet and/or toes
Toxins, Bites, Stings	Spider Bite (Brown Recluse)	Swollen, painful, and itchy in area of bite. Wound blisters. Wound may develop in a large ulcerated area within hours or days. Severe symptoms include fever, chills, nausea/vomiting, and body rash.
	Spider Bite (Black Widow)	Minimal to sharp pain, followed by redness and swelling at site. Bite may not be painful initially. Severe symptoms include abdominal pain, dizziness, headache, fever, severe cramps, weakness and difficulty breathing.
	Scorpion Bite	Immediate pain, itching, swelling, skin changing color, anxiety, fainting, numbness of tongue, vision problems, diarrhea.
	Tick Bite	Possible rash, tick usually visible. Risk of Lyme's disease.
	Snake Bite	Swelling around bite usually
	Insect Sting	Never pull out stinger. Use edge of credit card or something similar to snag venom sack about skin level.
	Jellyfish Sting	Typically painful, red rashes limited to area of direct contact. Lesions can last days/weeks. Severe stings can cause weakness, headaches, vomiting, fever, chills, muscle spasm, difficulty breathing, possibly shock.
	Stingray Sting	Immediate, excruciating pain, bleeding, wounded area may turn red or blue, nausea, vomiting, fever, chills, muscle cramps, paralysis, fainting.
	Catfish Sting	Severe pain, inflammation at site of sting
Contact Allergies	Poison Ivy, Oak, & Sumac	Redness, itchy skin; red bumps or large oozing blisters; often in streaks or patches
Medical Emergencies	Allergic Reactions	Skin (redness, itching, blistering, hives), lungs (wheezing, tightness, cough, shortness of breath), head (swelling of face, eyelids, lips, tongue, throat), nose (stuffy, runny, sneezing), eyes (red, itchy, swollen, watery), stomach (pain, nausea, vomiting, diarrhea)
	Diabetes	Fatigue, excessive thirst, excessive urination, irritability, blurry vision
	Stroke	Weakness, numbness of face, arm, leg, blurred vision, severe headache/dizziness/confusion
	Cardiac Arrest	No heart beat, unresponsive, not breathing
	Seizures	Person makes a sound followed by abnormal stiffening and jerking of arms and legs.
Environmental Emergencies	Hypothermia	Shivering, numbness, apathy, weakness, loss of consciousness
	Hyperthermia	Heat Exhaustion: cool, moist skin, headache, nausea, weakness, heavy sweating Heat Stroke: red, hot, dry skin, vomiting, loss of consciousness
	Frostbite	Lack of feeling, waxy, cold discolored skin
	Sunburn	Red, dry skin; blisters form when more severe
	Drowning/ Near-Drowning	Coughing, choking, vomiting, shortness of breath/gasping, blue lips/tongue, clenched teeth, frothy sputum, weak pulse, slow absent breath, and coma

Fish Handling Safety

Larry Olmsted

The potential for personal injury and disease from handling fish is one of the greatest, and most underestimated, hazards for fisheries biologists. Hazards include contacting numerous disease-causing organisms; punctures, cuts, or abrasion injuries from fish spines, gill rakers, teeth, or opercula; and secondary infections.

There is an increasing awareness of the diseases that can result from handling of fish, particularly those from polluted or organically enriched waters. The front page of the March 11, 2006 *Washington Post* reported on a mycobacteriosis epidemic in the Chesapeake Bay. The article reported that the disease (also known as fish handler's disease) can cause severe skin infections in humans and had spread to nearly three-quarters of the striped bass in the bay. Fish handler's disease is a skin infection that is not life threatening, but can lead to arthritis-like symptoms if left untreated. If untreated there is some evidence that fish handler's bacteria can lead to much more serious problems, including swollen lymph glands, gangrene, and lung problems.

Fish handler's disease is but one of a myriad of diseases potentially transmitted during the handling or culture of fishes. Roger Rulifson and his students at East Carolina University have prepared a table of examples of occupational diseases potentially hazardous to field biologists, culturists, and laboratory workers (Table 2). Of particular interest are the importance of avoiding polluted areas as much as possible, preventing contamination by wearing gloves and other protective equipment, avoiding punctures and open wounds, and thorough cleansing after exposure in the prevention of these diseases.

Puncture wounds and cuts are often accepted as a "cost of doing business" by biologists working with fish. These wounds can result from spines, gill rakers, opercula, and teeth. Aside from the initial pain from these wounds, the potential for secondary infections make this an unacceptable cost of doing business. Catfish present particular problems because they have glands at the base of their spines that may allow them to envenomate handlers when spines puncture the skin. These envenomations can cause intense pain out of proportion to the physical injury. Often, fish spines break off beneath the skin, and presence of the foreign object may not be obvious to the person. Even if no ray or spine persists in the body, secondary infections can require intense antibiotic treatment.

The potential for significant problems underscores the importance of prevention of fish spine punctures (spining) or other cuts resulting from handling fish. The most effective preventative measure is the use of appropriate gloves. Some field workers prefer nylon gloves, others opt for Kevlar. In both instances, it is imperative for dexterity that the

gloves fit snugly. Gloves offer considerable protection from spining, and essentially eliminate the possibility of nicks and cuts. Field workers who have used appropriate gloves for a period of time would not work without them. If a biologist has open wounds on their hands, they will often wear a pair of latex gloves beneath the outer gloves to provide an additional layer of protection against pathogens and infections.

Several other actions may reduce incidence of injuries. Catfish collected in gill nets present particular challenges. If spines are not being saved for aging, the biologist may use a pair of wire cutters to cut the spines off the catfish while they are still in the gill net. This facilitates removal of the fish from the net, and may ultimately lead to less stress on the fish. Use of appropriate tools such as a hooked picking tool allows the worker to remove netting more efficiently and minimize contact with spines.

Biologists should not take lightly wounds sustained from handling fish. As soon as possible the wound should be disinfected and bandaged. The wound can be disinfected with alcohol, bacitracin, Neosporin, or any other topical antibiotic ointment. Pain from wounds can be alleviated with acetaminophen or ibuprofen. In addition to first aid kits, sampling crews can prepare their own specialized fish handling kit including betadine, alcohol, towelettes, and a small scrub brush to wash and disinfect hands after handling fish. Similar kits should be standard equipment for all fish sampling crews.

Puncture wounds to joints should receive particular attention because they are especially susceptible to infection. At the first sign of infection, the individual should seek immediate medical attention. Signs of infection are ascending red marks, increased pain and soreness in joint areas or above the sting area. There may be a fragment of spine that needs to be surgically removed. Oral antibiotics are often prescribed to treat the infection and may help prevent progression to cellulitis. It is even more important to use sunscreen while taking antibiotics because certain antibiotics may cause sensitivity to the sun.

Table 2. Examples of occupational diseases potentially hazardous to field biologists, culturists, and lab workers.

Name	Other names	Pathogen	Carrier	How transmitted	Appearance on host	Human symptoms	Prevention
Vibriosis		<i>Vibrio parahaemolyticus</i> ; <i>V. vulnificus</i> ; <i>V. alginolyticus</i>	shellfish, . Crustaceans	cuts, open wounds, ingestion	not visible	acute diarrhea, abdominal cramps, fever, soft tissue destruction	protective foot and hand gear, avoid eating raw or undercooked shellfish and crustaceans
Diphyllobothriasis	tapeworm	<i>Diphyllobothriasis pacificum</i> ; <i>D. latum</i>	intermediate hosts planktonic crustaceans, freshwater fish; final hosts dogs, cats, humans	ingestion of contaminated water, food, particles	intestinal, may be visible at anal opening	diarrhea, intestinal blocking, vitamin B-12 deficiency	drink only boiled water, fully cook all fish meat, dispose of pet feces hygienically
Human edwardsiellosis	edwardsiella	<i>Edwardsiella tarda</i>	fish especially ornamentals and catfishes, reptiles, other ectotherms	ingestion of fecal contaminated food	not visible	gastroenteritis, intestinal distress similar to that of Salmonella poisoning	wash with good antibacterial soap after cleaning ponds and tanks
Melioidosis		<i>Burkholderia pseudomallei</i>	contaminated aquarium water	water inhalation; ingestion; water contact with skin wounds	not visible	similar to typhoid fever or TB; pulmonary cavitation; chronic abscesses	avoid contact; dispose of aquarium wastewater appropriately

Table 2. Continued.

Name	Other names	Pathogen	Carrier	How transmitted	Appearance on host	Human symptoms	Prevention
Erysipeloid or Erythema migrans	fish handler's disease, fish poisoning, fish hand, sealer's finger, whale finger, blubber finger, diamond skin disease	<i>Erysipelothrix rhusiopathiae</i>	fish, shellfish, marine mammals; also domestic pigs and nursing sows	handling infected organisms or fecal waste with open wounds		elevated lesions on skin (can be diamond-shaped), joint pain, fever, severe headaches; incubation 1-7 days	use gloves when handling
Crayfish Handlers Disease	Sealer's finger	<i>Erysipelothrix insidiosa</i> , species of <i>Vibrio</i>	fish and shellfish	handling infected organisms with open wounds or abrasions	not visible	painful itching or burning; joint swelling, stiffness; lasts up to 3 weeks	use gloves when handling, thick boots when wading
Fish TB	fish tank granuloma, swimming pool granuloma, tuberculosis, mycobacteriosis	<i>Mycobacterium marinum</i>	fish	handling fish or cleaning infected tank with open wounds		skin, soft tissue destruction; small purple lesions that gradually enlarge; incubation period 2 weeks-2 years; can mimic carpal tunnel syndrome	use gloves or other protective gear; avoid punctures or handling with open wounds

Table 2. Continued.

Name	Other names	Pathogen	Carrier	How transmitted	Appearance on host	Human symptoms	Prevention
Salmonellosis	Salmonella	<i>Salmonella sandiego</i> , <i>S. java</i> , <i>S. pomona</i> , <i>S. miami</i>	turtles, newts, frogs, toads, other reptiles and amphibians	direct contact and indirect (unwashed clothes); exposure to contaminated aquarium water	not visible	diarrhea, abdominal cramping, fever	wash hands and clothes after handling
Avian cholera		<i>Pasteurella multocida</i>	ducks, geese, coots, gulls, crows	direct contact with feces, secretions of infected birds, water and aerosols (e.g., fountains, air-borne particles)	not visible	diarrhea, vomiting, dehydration	wear gloves when handling; avoid areas of huge die-offs or aerosols from carcass burning
Swimmer's Itch		<i>Schistosoma cercarial dermatitis</i> (12-15 species)	waterfowl and humans -- adult phase; aquatic snails - intermediate	swimming or contact with waters infested with the flatworm		skin rashes and bumps (papulae) within 30 min of exposure	avoid waters with known outbreaks, prevalent waterfowl, or aquatic snail populations
Giardiasis		<i>Giardia intestinalis</i>	infected soil and water; surfaces contaminated with animal or human feces	accidental ingestion	not visible	diarrhea and dehydration	avoid contaminated soil, water, food, fecal exposure

Table 2. Continued.

Name	Other names	Pathogen	Carrier	How transmitted	Appearance on host	Human symptoms	Prevention
Cryptococcosis		<i>Cryptococcus neoformans</i>	wild birds	inhalation of airborne powdery bird droppings	not visible	serious brain and spinal cord disease, headaches, dizziness, sleepiness, confusion	avoid high risk areas with high concentrations of bird droppings
Tularemia		<i>Francisella tularensis</i>	handling muskrats, bull snakes, others; eating wild meat such as rabbit or rodents	handling infected animals, even with unbroken skin	not visible	fever, headache, nausea immediate; local lesions grow and ulcerate; ingestion causes enteritis, stupor, and delirium	wear impervious gloves when handling; cook meat thoroughly; avoid bites of flies, mosquitoes, and ticks in endemic areas; do not bathe or drink in untreated water
Newcastle Disease		viruses of family Paramyxoviridae	wild and domesticated birds	inhalation of infectious aerosols; also contact on inanimate objects and airborne between poultry houses	not visible	painful conjunctivitis, fever, influenza-like symptoms for up to 3 weeks	wear gloves when handling birds; avoid endemic areas

Table 2. Concluded.

Name	Other names	Pathogen	Carrier	How transmitted	Appearance on host	Human symptoms	Prevention
Hemorrhagic Disease		<i>Aeromonas hydrophilia</i>	warm water fish in southern areas stressed, traumatized, overcrowded or in low dissolved oxygen	handling infected organisms	can be externally visible	diarrhea, infections on skin, eye, other organs	
Red Plague		<i>Aeromonas salmonicida</i>	wild and captive freshwater fish	handling infected fish		diarrhea, skin infections	

Types of Emergencies

Drowning

Injuries

Man Overboard

Explosions

Capsizing & Sinking

Collisions

Groundings

Attitude

Abandonment

Survival

Rescue



IAP WORLDWIDE SERVICES, INC

Sea-Going Safety Tips

September 2008

Storm Tactics

Storms represent only a small percentage of actual at-sea time. While there is no "right way" to deal with extreme weather the skill of the crew, the type and condition of the boat, how much sea room is available, the storm duration and intensity are all considerations. The most important point here is that you have several options when dealing with heavy weather. Practice builds confidence; experiment with each option and you'll greatly improve the odds of weathering a storm home safely.

Preparing The Ship and Crew

Setting up the duty roster in the hours before the onset of bad weather, assuming you have the luxury of time, should be done with attention to the strains that will be put on the boat, the gear that could fail, the safety of the crew on deck and below, and finally the crew's general well being. Split the responsibilities into the following categories:

- Make sure all crew are wearing PFDs; jack lines and a harness are not "optional equipment".
- Monitor the VHF for updated weather information.
- Make sure emergency equipment (signal flares, throw bags etc) is readily available.
- In shallow waters be ready to deploy an anchor if needed.
- Clear the decks of anything that can blow overboard or become a missile.
- Secure anything in the cabin that can come loose.
- Check your charts for harbors of refuge, verify your position and make sure you know exactly how much sea room you have.
- Consider what would happen if the storm lasts very long and plan accordingly. Food, crew rest and periodic checks of rigging and gear are essential.

A Heavy Weather Attitude

When the weather report or the change in the sky alerts you to an impending patch of bad weather, it is important to begin your preparations. How you anticipate the high winds and possibly high seas ahead, how you keep your composure and react quickly to changing situations will be a determining factor in how you and your ship weather the storm.

In a gale or storm, most people will be amazed by the shriek of the wind. You will not be able to talk on deck in anything under a shout and even shouting you have to be looking directly at the other person to be heard. The noise can be wearing and can be the cause of miscommunications, errors and poor decisions. It is important to make certain you have heard clearly what has been said to you and that you speak clearly and directly when you are giving instructions. Don't assume everyone has heard. Ask them if they understand.

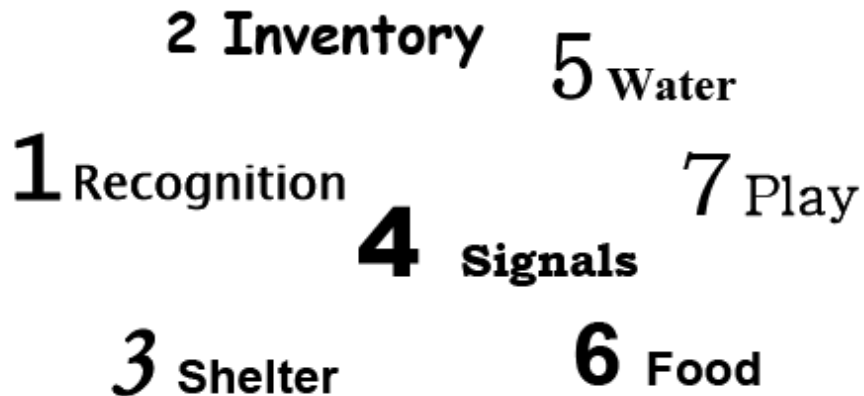
Worse than the wind, however, are the waves. The sight of huge, black-faced breakers coming at you one after another and the feel of the boat as it lurches and strains under the pressure of the waves, is a unique and occasionally frightening experience. A breaker that chooses to break right on top of you can severely damage the boat, sweep away gear stowed on deck as well as the life lines, and can carry off crew members who are not secured with their harnesses.

A heavy weather attitude is one that is full of confidence in the boat, respectful of the forces of nature to be confronted and calmly decisive when the going gets tough.

Survival Skills

The Seven Steps to Survival were assembled by the USCG from personal experiences of those who survived emergency situations. Committing the seven steps to survival to memory should be one of your goals in learning how to survive at sea.

(Modified From: AMSEA, Marine Safety Instructors Manual, 2001)



1. Recognition: You must quickly recognize the seriousness of the situation and that your life is in danger. Hesitation or denial may cost you your life, especially in harsh environments.

2. Inventory: Stop and assess the situation. Decide what you have that will help you survive (Inventory equipment, weather, your skills, injuries, and your mental condition). Doing so will help you make good decisions that will help you survive.

Survival Kits: A personal survival kit can take up very little space in an immersion suit, yet greatly enhance your ability to survive. Think of these seven steps and choose items that can help you with them. Items such as a knife, dental floss (a strong multi-purpose line), plastic garbage bags, matches, signal mirrors, a compass, hard candy, or boullion cubes are small items that can save you life and fit in a zip-lock bag. Vessels may have an emergency bag stored and a person named in the station bill to bring it in case of an emergency.

3. Shelter: Your biggest enemy in winter months is the cold. Shelter can be clothing, an immersion suit, a raft, or an overturned vessel anything that protects you against the loss of your body heat. Because water can take heat away from your body much quicker than air, shelter helps you keep as dry as possible. The high heat loss areas, including the head and neck, need to be protected most. The added buoyancy of a PFD helps to keep the head and neck out of the water, therefore conserving heat. Once you are on shore, shelter is your first priority after you inventory the situation. It takes hours to construct adequate shelter on shore and you should do so as soon as possible

4. Signals: A signal is anything that attracts attention and conveys a message. Radios, EBIRBS, and flares are signals carried by vessels:

Radios: The emergency frequencies are Channel 16 VHF and 2182 KHz or 4125 KHz on single side band radios (SSB). VHF radios are short range and SSB radios are for long-range communications. Near the radios, there will be a placard posted that describes MAYDAY calls. Be familiar with what constitutes a proper MAYDAY call. Vessels are required to monitor the emergency frequencies at all times. If you hear a MAYDAY call on the radio, listen carefully and take notes. Inform the person on watch and be ready to respond to the call if the Coast Guard does not.

Flares: The vessel will have flares and/or smoke signals stored in the life raft and other locations on the vessel (most likely the wheelhouse). Each type, handheld, rocket, smoke flares, etc, will have instructions for use printed on its canister. If you see a flare launched at sea, inform the person on watch immediately.

EPIRB (Emergency Position Indicating Radio Beacon): The vessel will have at least one EPIRB mounted in a float-free bracket that will be automatically activated in the event of sinking. The signal is received by satellite and, in new styles, will identify the sender. In the event of an abandon ship emergency it is an item you want to take with you. Someone will be assigned that duty on the station bill. If not shown by a crewmember, be sure to locate the EPIRB(s) on the vessel and read the directions on how to activate them

Other Signals: Anything that makes you bigger and brighter is a signal. Immersion suits have lights attached. You may have a signal mirror in your personal survival kit. If abandoning ship, anything that can be tossed overboard may help in aircraft spot your position. In a shore survival situation, three of anything (fires, buoys, immersion suits on the beach) is an internationally recognized distress signal.

5. Water: It is recommended that humans drink two liters of water per day to stay healthy. You can live without water for days, but will suffer dehydration from the onset of any abandon ship emergency. Life rafts have limited rations of water, but it is advised to gather as much as possible before abandoning ship, if time permits. Have a strategy for gathering extra water in an emergency. Never drink seawater or urine.

6. Food: A person can go without food much longer than without water. Never eat food without water your body requires water to digest food. Life rafts are supplied with limited food rations. In a shore survival situation, many types of edibles can be found near shore. Almost any animals or green plants in the inter-tidal zones are edible, but avoid mussels or clams they may cause paralytic shellfish poisoning.

7. Play: Studies have shown that mental attitude makes a difference in a survival situation. Play can be anything that keeps you occupied and prevents your mind from dwelling on the difficulties you are facing. Play can be reading, telling jokes or stories, completing a task, or improving your shelter anything that keeps you mind active and focused.

Donning Immersion Suits and Personal Flotation Devices

Personal Flotation Devices (PFDs)

No other piece of lifesaving equipment has saved more lives at sea than the personal flotation device, your lifejacket. They are designed to keep you floating face up and should do two things for the survivor: **KEEP YOUR MOUTH AND NOSE ABOVE THE SURFACE AND MAKE YOU CLEARLY VISIBLE TO RESCUERS.** Without flotation in extremely cold water, your ability to tread water or swim is measured in minutes. If you are unconscious or injured, survival time is even less.

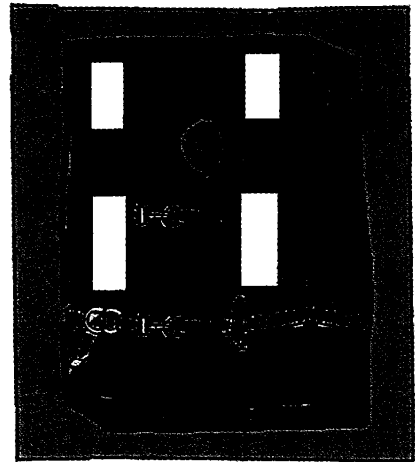
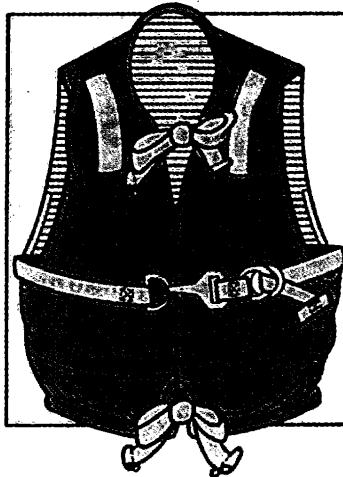
There are five types of PFDs that are approved by the U.S. Coast Guard. Selecting a PFD for certain waters has been made easier by classifying them into five different types.

Type I (Offshore Life Jackets)

A Type I has the greatest required buoyancy, 22 lbs, and is designed to turn most unconscious persons in the water from a face down position to a vertical and slightly backwards position. This is known as a **POSITIVE RIGHTING MOMENT**.

This type of PFD is suitable for all waters, especially in waters where rescue may be delayed. Reflective tape is distributed on the front and back for added visibility. A whistle is required. It is reversible for ease of donning and available in two sizes - Adult (90 lbs or more) and Child (less than 90 lbs).

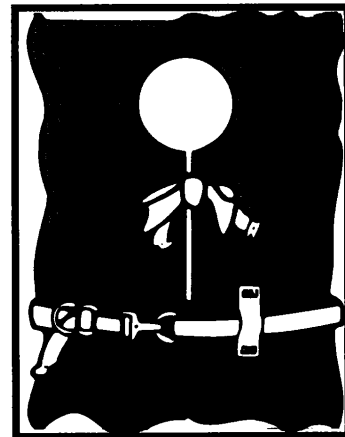
Anything less than Type I in open water is inadequate.



Type II

This PFD is designed for the recreational boater when rescue can be expected in a short period of time and water conditions are relatively calm. It has no less than 15.5 lbs of buoyancy.

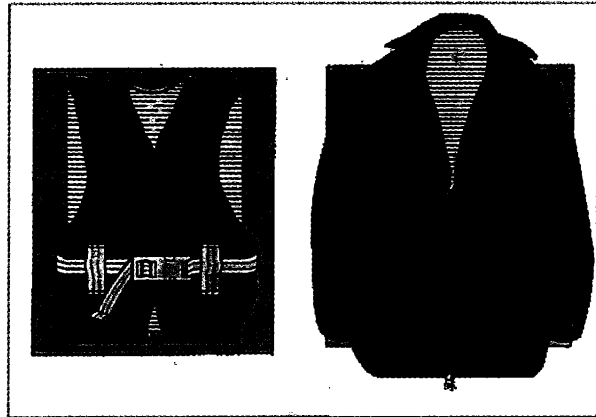
It is also designed to turn the wearer from a face down to a vertical or slightly backward position but not as pronounced as the TYPE I.



Type III

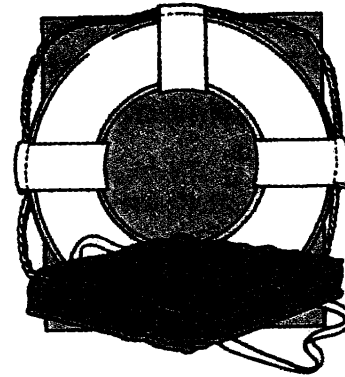
This PFD is designed for the active outdoorsman, with comfort in mind. The TYPE III will maintain the wearer in the position that they assume in the water. Common users are hunters, recreational fisherman, water skiers and canoeists. They are NOT DESIGNED to turn the wearer from a face down position.

Type III includes float coats and vests, which provide flotation and small amounts of hypothermia protection. They have no less than 15.5 lbs of buoyancy.



Type IV

This type of PFD is designed to be THROWN to and grasped by a person in the water. It is designed NOT TO BE WORN! Ring buoys and boat cushions are the most common in the marine industry. They have a minimum of 16.5 lbs of buoyancy.



Type V

This type of PFD is designed to meet a specific need or activity on or over the water. These can be work vests, float suits and immersion suits. They are not designed to turn the wearer from a face down position. They have no less than 15.5 lbs of buoyancy.

Helpful PFD Suggestions

- Try on your PFD and adjust it until it fits comfortably in and out of the water.
- Mark your PFD with your name if you are the only wearer or need a specific size. Always mark it with the name of your boat.
- Do not alter it. If it doesn't fit properly, get one that does. An altered PFD is no longer Coast Guard approved.
- Dry a wet PFD thoroughly before stowage. Store it in a well-ventilated area.
- Do not dry your PFD in front of a radiator or other source of direct heat.
- Make sure there are at least 31 square inches of retro-reflective tape on the PFD to increase your visibility.
- Accessories such as strobes and whistles can be attached to your PFD in a location that will not interfere with your work on deck.

Immersion Suits

Coast Guard approved immersion suits are required for each crew on vessels operating on all U.S. coastal waters above 32 degrees N latitude.

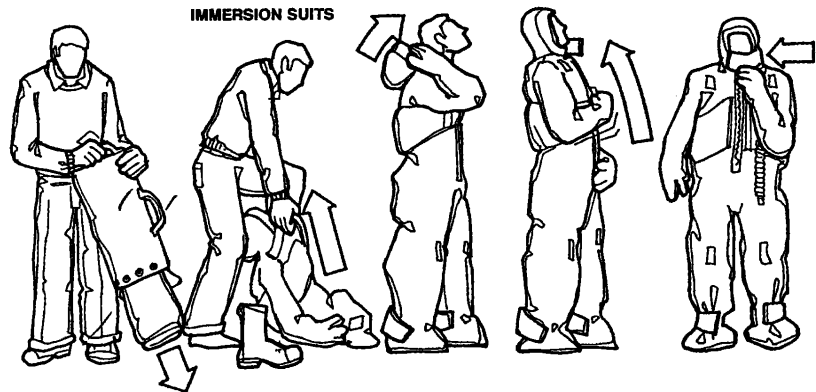
There are many different varieties of immersion suits on the market. Some suits are just big overalls; others have boots, detachable gloves, leg zippers and other features. An immersion suit should be equipped with a whistle; an attached light is required on oceangoing vessels of any size.

It should have an inflatable pillow to keep your head and neck out of the water for better thermal protection and to help eliminate the strain of holding your head up.

Make sure the suit fits you properly; there have been cases of people drowning in suits that were too large for them. The suit should form a tight seal around your face. Mark the suit with your name and the vessel's name with a waterproof marker.

Quick and Safe Donning Procedures

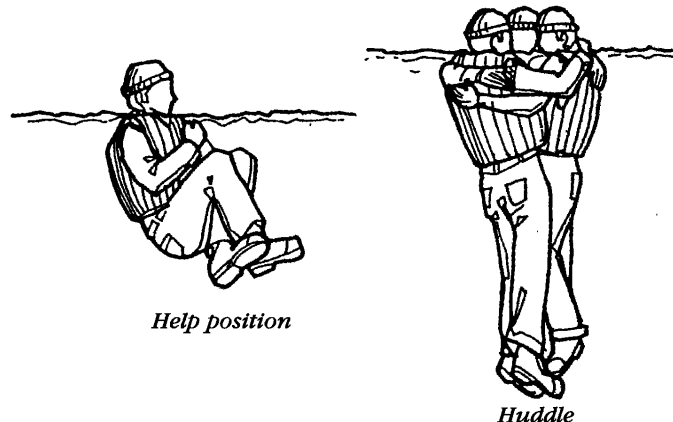
- A sharp jerk on the carrying case will eject the suit.
- Lay the suit out flat to make sure no parts are folded.
- Remove your boots, but leave plenty of warm clothes on.
- Step into legs of suit while in a stable position; if need be, do this in a sitting position or leaning against a support. Put one foot in at a time. With both feet in, pull the suit up to the waist and adjust feet securely.
- Put one arm in at a time and pull the suit up over the shoulders. Squat down a bit to assist yourself in getting the head gear on.
- To avoid problems in zipping the suit, arch your back to remove wrinkles in the fabric. If you have a beard, turn your head to one side, so that facial hair is not caught.
- Secure face flap to reduce incoming water.



Once the suit is completely on, squat down and release some of the air trapped in the suit by lifting a piece of the suit off the face with one hand. Secure the Velcro straps around the feet to make the suit a bit more tailored. Once this is complete, the suit is ready for water entry.

Entering the Water

- Enter the water, protecting your head with one arm and step out to the side.
- Avoid facing the water and jumping forward. A slip is more likely to cause a head injury.
- If possible, avoid submerging your head by gently entering the water to prevent seawater from entering the suit through the face opening.



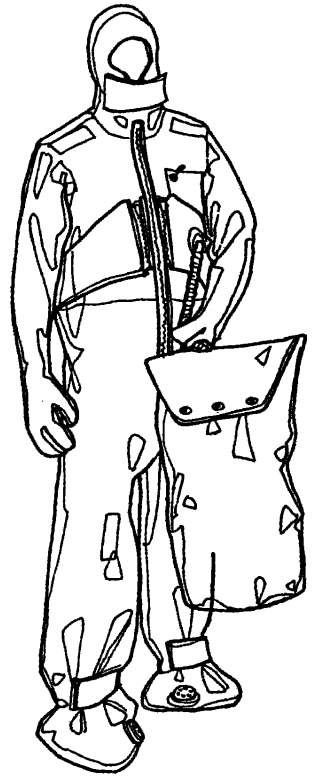
- Be sure the suit is fully zipped and that all closures are snug. Leave the external bladder deflated until you are in the water.
- Protect your head with one arm, check the area below and jump with feet together.

Stowage and Maintenance

Immersion suits should be stowed in a very accessible, dry place. Aboard fishing vessels, there is a debate whether that means in each crewman's bunk or in the wheelhouse. If you put it in your bunk, you know where it is, but you may not be able to reach it in an emergency. Wheelhouse storage would normally be best, but there may not be adequate space. It is a decision you must make based on the configuration of your boat.

Whatever you decide as a location for all survival gear, especially the immersion suits, know the location and make sure you can reach your suit in a hurry, allowing free access from the working platform.

Immersion suit bags should have sizes marked allowing crew to select the proper suit for them. Zippers and the general condition of materials should be inspected during scheduled monthly emergency drills. PFD's, which are not encased, should be stowed out of direct sunlight to prevent against fabric deterioration and should also be checked during emergency drills.



HELP.

PFD Maintenance

The following care instructions are provided to help you maintain the condition of your program issued personal flotation device (PFD). It is your responsibility to perform visual inspections of the buoyancy cells and inflation system at least once each quarter and report any maintenance issues to your program manager. Program staff will inspect all safety equipment prior to issuance and will use an authorized Mustang Service Station for all bladder or inflation system repairs.

Visually examine your PFD for damage or excessive abrasion, wear, tear or to bladder or fabric covering. If in doubt, return it to program for replacement.

Test battery on PFD strobe.

Check the oral inflation valve, fully inflate PFD and hold valve under water. If bubbles appear, deflate and inflate again. Should the leak persist, return to program for replacement.

Test for general leaks by orally inflating your PFD until firm and let stand overnight. A leaking PFD will not hold its firmness and should be replaced.

Inspect the CO₂ cylinder, if punctured, replace with a 33gram cylinder

Remove cylinder, auto cap and bobbin before washing. Apply a pre-wash stain remover to grease or blood and wash with regular detergent. Rinse with fresh water and hang dry. DO NOT USE BLEACH.

Reassemble inflation system parts and repack PFD as outlined in previous instructions and illustrations.

Store in warm, dry location

The following actions should be taken to reduce accidental inflation of your PFD.

Remove CO₂ cylinder and auto cap during travel and between trips.

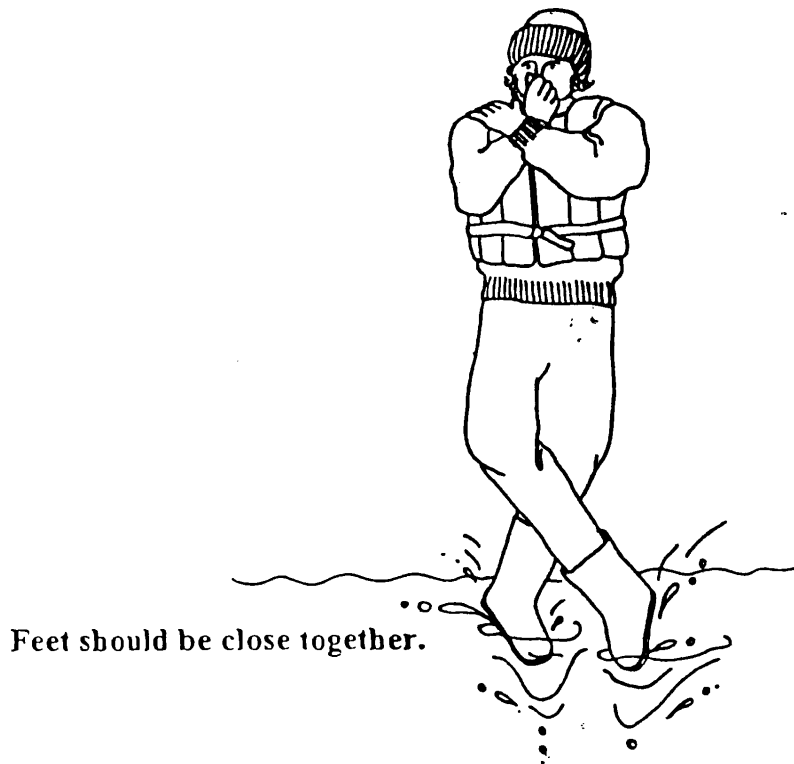
Store auto cap and bobbin in a ziplock bag, when not in use.

Frequently check the manual lever to ensure it is up in the ready position and the green indicator pin is present.

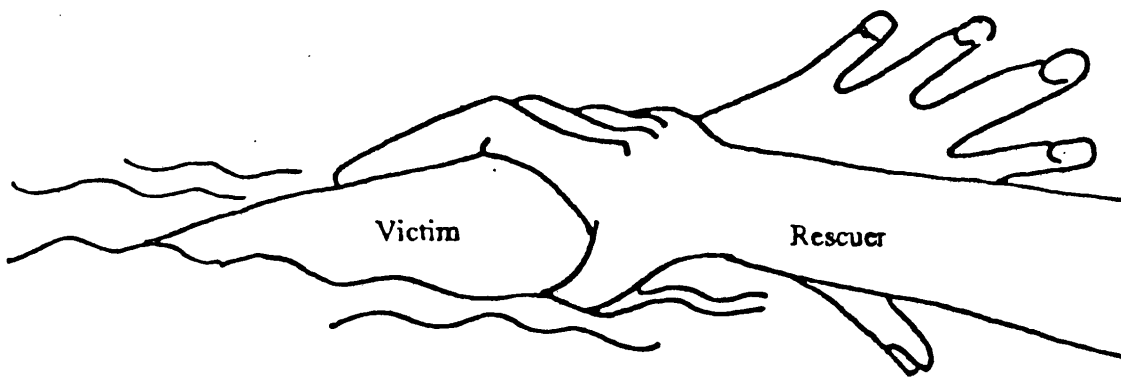
Check bobbin frequently. Replace bobbin every 6 months or when pitted in appearance.

*All PFD's will be marked with NMFS, the Program and a number. Any PFD that; no longer hold air; is unable to manually inflate; or reaches 5 years of age from the purchase date will be replaced.

JUMPING WITH PFD



CORRECT HAND POSITION FOR RESCUE



CARE & MAINTENANCE OF IMMERSION SUITS

Your immersion suit's life span—or your own, if you find yourself in the water—depends greatly on how you care for and maintain your immersion suit. Your immersion suit is only as good as your care of it. Here are some points that should be checked whenever you inspect your suit (at least once a month).

☐ Zipper:

Inspect closely for missing teeth and signs of corrosion. Lubricate teeth on the **outside** and inside of zipper with product recommended by the manufacturer. Do not use oil-based greases. Scrub zipper with a tooth brush to remove build up of residues. Run zipper up and down to check for smoothness.

☐ Inflation Hose & Bladder:

Pull gently on tube to make sure the tip of tube or its attachment point on the bladder do not separate. Use plastic wire ties at these points if not present. Leave the silver knurled knob below mouth piece in the down position, ready for use (see figure 1). Once a year remove bladder, inflate overnight or soak under water to check for leaks. Make sure to reattach to suit when dry!

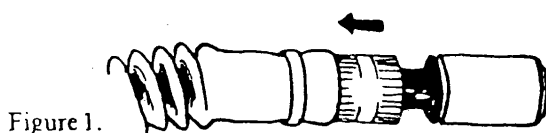


Figure 1.

☐ Material:

Inspect closely for small holes, tears and compression wrinkles in suit. If dirty or used in pool or salt water, rinse thoroughly inside and out with fresh water. Turn suit completely inside out to dry in a well ventilated space. Do not dry in direct sun. One or two days later it will be ready to dry on the outside. If dirt or oil is present, wash with a mild soap and rinse. Do not dry clean.

☐ Markings:

All immersion suits are required to be marked with the owner's name, vessel's name or the name of the person to whom the suit is assigned. (BEWARE—Paint may damage the material.)

☐ Practice:

Don your suit. How long does it take? How well does your suit fit? With foul-weather gear on can it still be zipped up?

☐ Stowage:

Leave the zipper open, but zipped up one-inch up from the bottom. Roll the suit legs up first, followed by hood and finally place arms over and place in bag (see figures 2 and 3). Make sure the neoprene flapper valve in foot

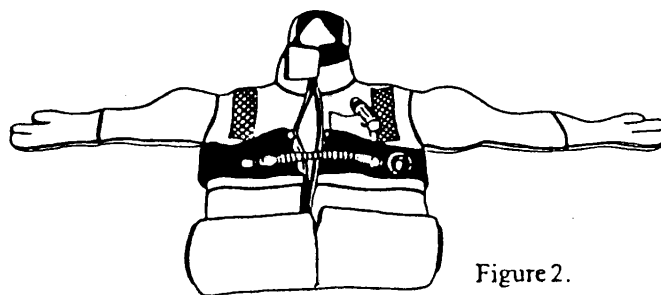


Figure 2.

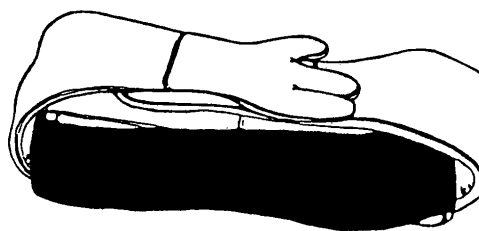


Figure 3.

is not creased. Otherwise, follow the manufacturers stowage recommendation. Lubricate snaps on bag. Store suits in their bags, not against each other without bags. Do not place heavy weights on bag as suit material will compress and may puncture or weaken. Place in an accessible location so it can be retrieved quickly in an emergency. Plastic bags kept with suit can be worn over shoes/boots to make donning quicker. For long term, off-season stowage, hang the suit in a dry place on a thick, padded hanger (like one designed for a dive suit—do not use wire hangers).

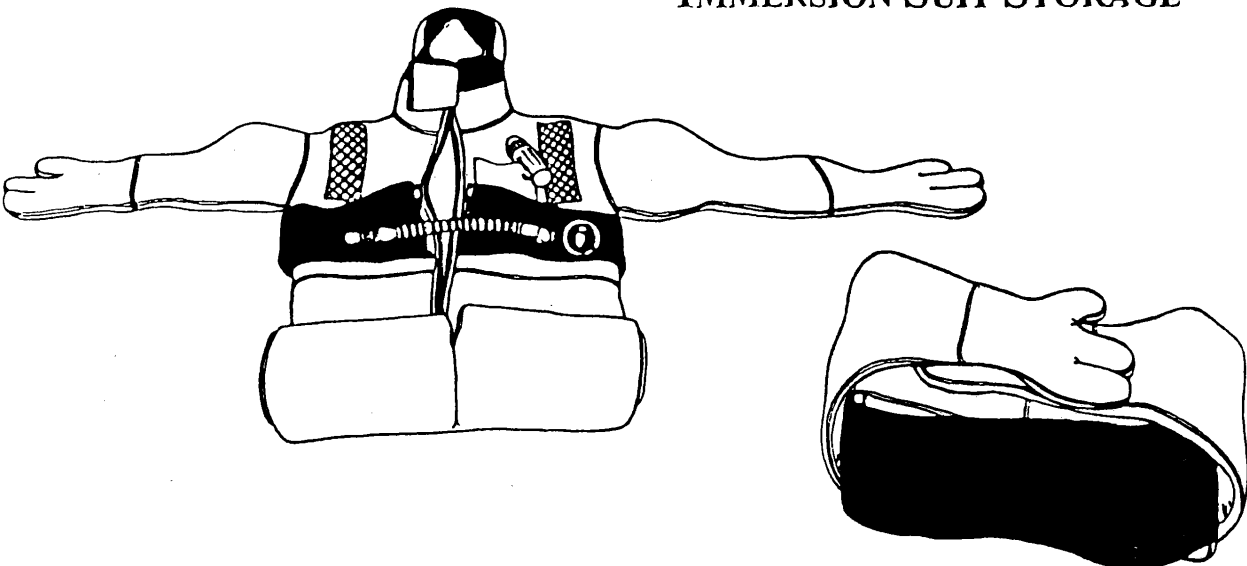
☐ Accessories:

Suit should have 31 square inches of retro-reflective tape visible above the water in any stable position (as req'd by the F/V Safety Act), a zipper tab for ease in gripping with suit gloves on, a whistle, and USCG approved light. Additional recommendations include a personal survival kit, hand-held VHF radio, and personal EPIRB.

JUMPING IN AN IMMERSION SUIT



IMMERSION SUIT STORAGE



Making a Voice Radio Distress Call and Using Visual Distress Signals

Location Aids for the Mariner

The key to being rescued quickly is to let people know where you can be found. By using the four detection factors: light, color, sound and movement, you will gain attention.

Your most powerful distress tool is your radio. In the event of an emergency, it is extremely important to establish radio communication immediately with the Coast Guard or another vessel.

DO NOT WAIT UNTIL THE SITUATION IS OUT OF CONTROL. At that point, there may be no power to the radio or it may be too late for rescue units to respond.

Having and using marine radios is an integral part of fishing and a valuable aid in an emergency. It is also a privilege granted by the agency that issues the licenses — the Federal Communications Commission (FCC). Emergency marine radio calls are made on VHF channel 16 (156.8 MHz) or SSB 2182 kHz.

Emergency Calls

There are three internationally recognized radio signals used for marine emergencies. MAYDAY, PAN-PAN, and SECURITY. All three have priority over other radio traffic.

MAYDAY calls also have priority over all other emergency signals. They are to be used only when a vessel or life is threatened by grave and imminent danger and a request is made for immediate assistance.

If you hear a MAYDAY call and it is not answered, you must answer it and log the details of the call. When you can be reasonably sure you will not interfere with other distress-related communications, advise the vessel in distress what assistance you can offer.

MAYDAY RELAY: All vessels that are required to have radios are required to relay Maydays that are heard but go unanswered.

To relay an unanswered Mayday, make sure your radio is on and you transmit on channel 16 VHF. Then state:

1. Mayday relay, Mayday relay, Mayday relay.
2. YOUR vessel's name and call sign.
3. Name and call sign of vessel in distress.
4. Location of vessel in distress.
5. Nature of problem with vessel in distress.
6. Degree of assistance needed.
7. Listen for acknowledgement.
8. Transmit additional requested information.

PAN-PAN (pronounced pahn-pahn) calls are for very urgent messages concerning the safety of a boat or persons. Examples include urgent storm warnings by an authorized station and/or loss of steering or power in a shipping lane. To transmit a PAN-PAN message, make sure your radio is on and you transmit on channel 16 VHF. Then state:

1. PAN-PAN, PAN-PAN, PAN-PAN all stations.
2. Your vessel name and call sign three times.

3. Nature of urgent message.
4. Position (latitude and longitude and LORAN are preferred).
5. Total number of people on board.
6. Vessel description (length, color, type, etc.).

SECURITY (pronounced say-cure-i-tay) calls are the lowest priority emergency calls and are used to alert vessel operators to turn to another station to receive a safety message. SECURITY warns nearby vessels of a possible hazard.

Emergency Position-indicating Radio Beacons (EPIRBs)

Vessels that are operating beyond the “three-mile line” and are greater than 36’ in length are required to have an FCC type Coast Guard accepted Category 1 406 MHz EPIRB (float free). Vessels less than 36’ in length beyond the “three mile line” are required to have a Category 2 406 MHz EPIRB.

Drills are to include demonstration of proper use including arming. If you have an EPIRB, turn it on as soon as possible and leave it on. A continuous transmission provides the best hope for rescue. The lanyard attached to the unit should be fastened to the raft or to an individual in the water. Most EPIRB’s operate best when floating with the ANTENNA VERTICAL.

Visual Distress Signals

A visual distress signal is anything that makes you BIGGER, BRIGHTER OR DIFFERENT. By yourself, you are a small target; anything you do to make yourself more visible will help rescuers find you.

Visual distress signals are included in the emergency equipment pack aboard your life raft. They include both pyrotechnics and devices such as flashlights, portable strobe lights, mirrors and distress flags. All have advantages and disadvantages and all are of value only if they are used effectively.

READ THE INSTRUCTIONS — Whatever the signals, always carefully read and follow the affixed instructions. The signals are very powerful and can cause injury and even worse if not treated with respect.

Types of and Use of Visual Distress Signals

Parachute Flare

Contained in a plastic canister, the parachute flare produces a bright red flare suspended by a parachute. This flare is activated when you have reason to believe that a rescue craft is in your area. To activate:

- Hold flare vertically, rocket end up.
- Remove the top and bottom caps, holding flare firmly.
- Remove the safety pin from bottom. This allows the firing trigger to be lowered into the ready-to launch position.
- Aim slightly downwind and squeeze the trigger up into the canister. **BE READY FOR A KICK, AS THE ROCKET WILL GO TO 1000’.**
- The flare will burn for 30-60 seconds. Under ideal conditions the flare is visible up to 30 miles.

Pistol Launch Flares

To use this type of flare, load the cartridge into the barrel of the pistol. Aim downwind and pull the trigger. This will activate the signal. It will reach an altitude of 30-50 feet and burn for 8-12 seconds.

Hand-Held Flares

The hand-held flare is designed to produce a bright red distress signal when activated. There are two types.

One type has an arrow on the handle and an arrow on the metal flare. To activate:

- Pull the handle down and rotate until the two arrows line up.
- Apply upward force to the handle to activate.
- DO NOT hold onto the flare itself as it becomes very hot.
- If it does not activate after the initial striking, attempt another strike. If it still does not activate, throw it in the water.
- Activate downwind.

The other style of hand held flare requires:

- Lift up on the tape that goes the length of the flare. By doing this, the top side (striker) is exposed.
- To remove the cap, twist it. Hold it out and away from the raft.
- Strike the topside of the cap on the flare end.
- Be careful of the "slag" that will drip, it is extremely hot and dangerous to human skin contact.

Strobe Light

The strobe light is a compact, high-intensity light that is capable of operating continuously for 12 hours. It is activated by a "push-on / push-off" button located at the base of the unit.

Signaling Mirror

The signal mirror is one of the best daytime signals available. Aim the mirror into the sun locating the beam on your hand or a nearby surface. Look through the aiming hole in the center of the mirror at the beam. A bright dot should appear. Place the dot toward the rescue craft. Survivors should practice with mirrors constantly since the reflected light signal could possibly be seen by rescue craft out of the victim's sight or hearing range.

Sea Dye

Sea dye marker consists of a chemical which, when immersed in water, produces a bright greenish-yellow color that is highly visible. To use the dye marker, open the container and swirl it around in the water. Drift about 20 yards and lower the dye back into the water and create another slick. Continue to do this and you will create a trail for rescue craft to follow. The duration of the sea dye will vary from 20 minutes in rough seas to 2 hours in calm sea. Keep the container outside of your survival craft, as the dye will spill inside the raft creating a mess.

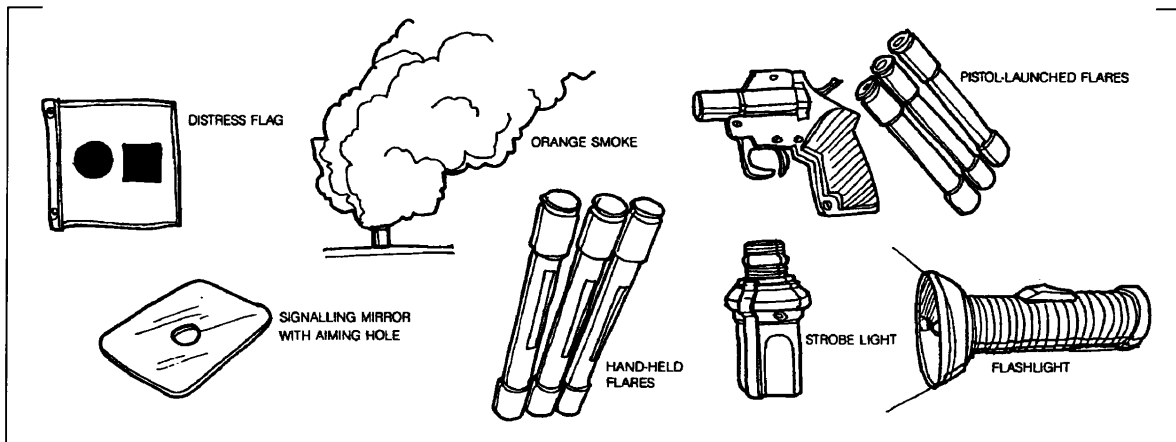
Floating Smoke Signal

Best seen during the day, the floating orange smoke signal is contained in a waterproof canister.

To operate:

- Remove plastic cover.
- Locate activating cord and pull firmly.

- Throw it into the water immediately.
- Within 3-4 seconds, a popping sound will occur and the smoke will be visible. The activation time is 3 minutes.
- Activate downwind, as the smoke will be very pungent.



Stowage and Maintenance

Store pyrotechnics in a cool, dry, readily accessible place. Each crewmember on board should know where visual distress signals are stowed. One crewmember should be assigned to bring the signals in an emergency. It is advisable to store a pair of gloves along with pyrotechnics.

Pyrotechnics have an expiration date and need replacement once expired to ensure proper functioning.

Never aim pyrotechnics directly at rescue craft. This does not encourage good relations with the rescue team members.

Points to Remember

- Hold flare downwind.
- Read instructions PRIOR to rescue arriving on scene.
- Use them wisely — They are limited in quantity.
- Many flares are packed in plastic bags for waterproofing.

Distress Communications Form

Instructions: Complete this form now (except for items 7-10) and post near your radio or radiotelephone.

Speak SLOWLY - CLEARLY - CALMLY

1. Make sure your radio or radiotelephone is on.
2. Select 156.8 MHz (channel 16 VHF) or 2182 KHz.
3. Press microphone button and say "MAYDAY, MAYDAY, MAYDAY!!"
4. Say: "THIS IS ____ (your boat name) ____, ____ (your boat name) ____, ____ (your call sign) ____, OVER"
5. Release this microphone button briefly and listen for acknowledgement. If no one answers, repeat steps 3 & 4. If there is acknowledgement, or if the Coast Guard or another vessel responds:
6. Say: "MAYDAY" ____ (your boat name) ____.
7. DESCRIBE YOUR POSITION in lat/long coordinates, LORAN-C coordinates or range and bearing from a known point.
8. STATE THE NATURE OF YOUR DISTRESS.
9. GIVE NUMBER OF PERSONS ABOARD AND THE NATURE OF ANY INJURIES.
10. ESTIMATE THE PRESENT SEAWORTHINESS OF YOUR BOAT.
11. BRIEFLY DESCRIBE YOUR BOAT, length ____, color ____, hull type ____, trim ____, masts ____, power ____, any additional distinguishing features ____.
12. Say: "I WILL BE LISTENING ON CHANNEL 16 / 2182" (cross out channel that does not apply).
13. End message by saying "THIS IS ____ (your boat name and call sign) ____, OVER."
14. If your situation permits, stand by the radio to await further communication with the Coast Guard or another vessel.

Emergency Instructions

F/V _____

General Instructions

1. All crew members and passengers are responsible for knowing their assigned emergency duties and stations.
2. All crew members are responsible for knowing the location of the ship's lifesaving and emergency equipment.
3. All crew members and passengers shall participate in all emergency drills and training sessions.
4. Newly reported personnel should report to _____ for safety emergency or orientation.
5. If you are in doubt as to any of your responsibilities as specified in this bill, ASK THE CAPTAIN for clarification.

Emergency Signals

Fire and Emergency Signal (_____)

The Fire and Emergency Signal shall be a continuous blast on the ships whistle with the same signal sounded simultaneously on the General Alarm for a period of not less than 10 seconds.

Man Overboard Signal (____ _)

The Man Overboard Signal shall be 3 Long Blasts of the ship's whistle with the same signal sounded simultaneously on the General Alarm, with the signal to be sounded a minimum of four times.

Abandon Ship Signal (***** _____)

The Abandon Ship Signal shall be at least seven (7) short blasts followed by one (1) long blast on the ships whistle, with the same signal sounded simultaneously on the General Alarm.

Radio Call	Frequency:	High Site:	DF Bearing:
Type of Comms:		Original <input type="checkbox"/> Relay <input type="checkbox"/> Call Back Number:	
Time:	Date:	UCN:	OUC:

-- Initial SAR Check Sheet --**ELECTRONIC FORM**

1. Position		Type of Position:	<input type="checkbox"/> Lat/Long
How determined?			<input type="checkbox"/> Loran Lines
			<input type="checkbox"/> Geographic Reference
2. Number of Persons On Board		Adults:	Children:
		Total: 0.00	
3. Nature of Distress (Any Medical Conditions?)			
4. Description of Vessel Name: _____ Length: _____ Doc/Reg: _____			
Anchored?.....Make: _____ Color: _____			
5. Have all persons on board the vessel put on Personal Flotation Devices / adequate number of PFD's available?			

**** ADVISE REPORTING SOURCE OF INTENDED ACTIONS AT THIS TIME ****

6. Determine Initial Severity / Emergency Phase	
<input type="checkbox"/> Distress	<input type="checkbox"/> Uncertainty <input type="checkbox"/> Alert
<input type="checkbox"/> Dispatch Resources / Activate SAR Alarm	Additional information is needed
<input type="checkbox"/> Advise reporting source of Coast Guard's Actions	Complete one or more of the following:
<input type="checkbox"/> Issue Urgent Marine Information Broadcast (UMIB)	<input type="checkbox"/> Supplemental Check-sheet
<input type="checkbox"/> Brief Sector / District	<input type="checkbox"/> Overdue Check-sheet
<input type="checkbox"/> Provide emergency instructions to vessel in distress	<input type="checkbox"/> Flare Sighting Check-sheet
<input type="checkbox"/> Complete additional check-sheets as situation dictates	<input type="checkbox"/> MEDEVAC/MEDICO Check-sheet
<input type="checkbox"/> Refer to CG Addendum/Sector Mobile & D8 OPLAN	<input type="checkbox"/> Grounding Check-sheet

Persons in the Water		
Number:	Description:	<input type="checkbox"/> PFD - type/color:
Time:		<input type="checkbox"/> Exposure Suit
Confirmed?		<input type="checkbox"/> Light

**** Complete all of the above before shifting frequency; Complete below before hanging up phone ****

Reporting Source	
Name:	
Vessel Name:	
Call back number (with area code):	
cell phone _____	_____
radio / call sign: _____	/ MMSI: _____
Address:	

On Scene Weather			
Wind	Seas	Swells	Visibility
Weather Type			

VHF Marine Radio Channels

The chart below contains a partial listing of channels boaters should be familiar with:

Channel	Type of Message and Use
06	Intership Safety: Used for ship-to-ship safety messages and search messages and ships and aircraft of the Coast Guard.
09	Boater Calling: FCC has established this channel as a supplementary calling channel for recreational boaters in order to relieve congestion on VHF Channel 16.
13, 67	Navigation Safety (Also known as the Bridge-to-Bridge channel): Ships greater than 20 meters in length maintain a listening watch on this channel in US waters. This channel is available to all ships. Messages must be about ship navigation (i.e. passing or meeting other ships). You must keep your messages short. Your power output must not be more than one watt. This is also the main working channel at most locks and drawbridges. Channel 67 is for lower Mississippi River only.
16	International Distress, Safety and Calling: Use this channel to get the attention of another station (calling) or in emergencies. Ships required to carry a radio maintain a listening watch on this channel. USCG and most coast stations also maintain a listening watch on this channel.
21A, 23A, 83A	U.S. Coast Guard only
22A	Coast Guard Liaison and Maritime Safety Information Broadcasts: Announcements of urgent marine information broadcasts and storm warnings on Channel 16.
24, 25, 26, 27, 28, 84, 85, 85, 87	Public Correspondence (Marine Operator): Use these channels to call the marine operator at a public station. By contacting a public coast station, you can make and receive calls from telephones on shore. Except for dis-tress calls, public stations usually charge for this service.
70	Digital Selective Calling: Use this channel for distress and safety calling and for general purpose calling using only digital selective calling (DSC) techniques. Note: The U.S. Coast Guard will not be equipped to respond to DSC distress calls on Channel 70 until 2006—use Channel 16.

Care and Maintenance of 406 EPIRBs

Since August 1991, commercial fishing vessels with galley and berthing spaces that operate beyond three miles from shore, have been required to have category 1, 406 MHz Emergency Position Indicating Radio Beacons (EPIRBs).

Category 1, 406 EPIRBs, though much more expensive than the old Class A EPIRBs, provide superior reliability, signal strength, location accuracy and provide much more detailed information to search and rescue agencies. There are several steps to take to ensure your EPIRB will work when you need it.

Registration

Send in the EPIRB registration and identification card! It asks questions about you and your vessel that will aid search and rescue agencies in finding you in an emergency. It will also allow them to contact you without sending out an expensive search should your call be a false alarm.

Instructions

Read the instructions for mounting and operation of your EPIRB carefully! EPIRBs do not come shipped in the ON position. It is important to learn the correct switch position for arming the EPIRB after it is installed.

Location

Mount your EPIRB in a location that will allow it to float free if the boat should sink and where icing will be minimal. Avoid locating it under an overhang or anywhere it could get hung up.

Test

Test your EPIRB once per month. 406 EPIRBs have an electronic self-check. Make sure that you follow the testing procedures in your manual. Test in the first five minutes of any hour. All EPIRB tests should be noted in your log book.

Check for Damage

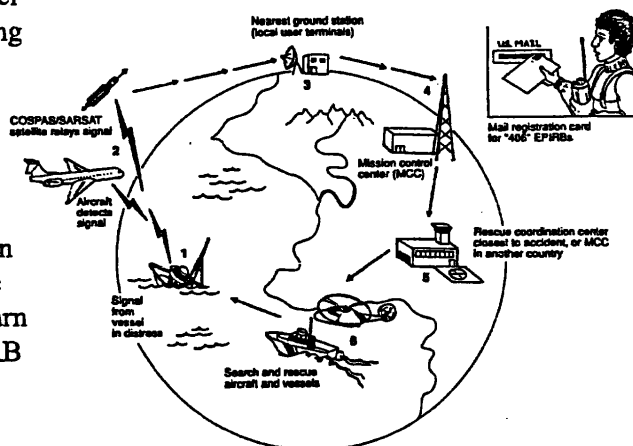
Check your EPIRB during rough sea conditions to make sure it has not been activated or damaged.

Show and Tell

Show all crewmembers and passengers on your vessel how the EPIRB operates before you get underway. This should be a part of your drills and instructions.

Maintenance Schedule

Although your EPIRB battery may be good for two to five years, many of the hydrostatic releases mechanisms need to be replaced every two years. Check the maintenance schedule on the release for your EPIRB.



**MONTHLY TEST LOG
FOR
NOAA FISHERIES OBSERVER: _____**

EPIRB Battery Expiration Date: _____

EPIRB Registration Number: _____

Date	Time	Comments	Date	Time	Comments

****Note: A 406 MHz EPIRB can be tested at any time****

Recovering an Individual from the Water

Man in the Water

Rule #1 – Don't be the man in the water!!

No one ever plans on falling overboard. A person who unexpectedly finds himself in the water is a person with fear . . . even if they are good swimmers. The fall itself is bound to invite a certain amount of shock and panic.

Upon initial entry into the water, the respiratory system (breathing) will experience a gasping response (short, shallow and irregular breath rate). Another life-threatening reaction that may occur within seconds of entering the water is heart attack. This is of particular importance for out-of-shape people who fear the water. More often than not, these victims are not wearing a PFD.

Injuries during the fall could render even good swimmers helpless. A successful man-overboard rescue is highly dependent on how well the potential rescuers respond and upon how well the victim can assist. The following are guidelines in the event you are a VICTIM or RESCUER.

Man Overboard

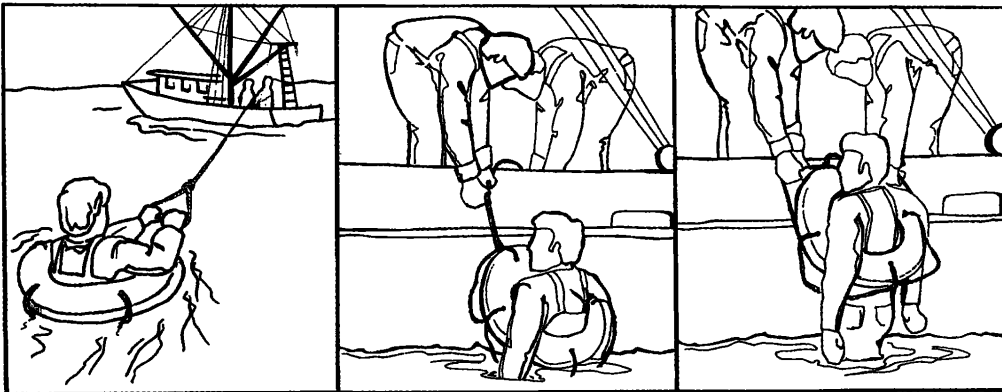
The success of recovering a person overboard depends on a few factors:

- Ability of victim to alert someone of the fall.
- Ability of rescuer to return to victim.
- Available rescue equipment.
- Drills and procedures practiced prior to incident.
- Temperature of water and time of incident (day vs. night).

If You Are the Victim

Things to Consider:

- Am I wearing a PFD?
- Can I swim back to where I fell?
- Did someone see me fall?
- How can I attract attention?
- Will I be able to assist during rescue?



Ring buoys provide flotation and permit the victim to be hauled aboard by hand or with a hoisting tackle. A bowline or lifeline can be used if the person is too large to use a ring buoy effectively. Any debris or floatable trash thrown near the victim will help mark his position for pick up. Strobe lights, "day-glow" markers or smoke pots attached to a ring buoy will mark the victim's position.

Actions to Take:

- While the fall is taking place, scream to alert others. (Choice of words left to your discretion.) “Help!”, “Man overboard!” or a crew member’s name is useful.
- Once in the water, surface and assess your situation (Where am I? Who saw or heard me fall? Am I wearing a PFD?)
- Get control of your breathing.
- Remain as calm as possible; realize the chances of survival are in your favor and remember your crew likes you....hopefully.
- Begin to draw attention to your location using sound or movement:
 - Waving your arms.
 - Blowing a whistle.
 - Kicking your feet, creating a splash.
 - Splashing water with your hands.
- Do not swim if nothing is in sight.
- Utilize your survival skills learned in training (warm water vs. cold water).
- Once spotted, notify rescuer of any injuries or other people in the water.

If You Are the Rescuer

- Sound alarm “MAN OVERBOARD” and give location, i.e. port side, 10 o’clock, NW.
- Mark the location where the person fell in by throwing some type of flotation and mark, fix position on plotter.
- Maintain 100 percent visibility on the victim.
- Communicate with other crew members and captain.
- Once alongside, throw the victim a ring buoy, rope or line.
- Use available equipment to bring victim back on board.
- If water entry/rescue swimmer is required:
 - Wear a PFD/Immersion suit and take one for the victim.
 - Attach a safety line to the crewmember.
 - Toss the PFD to the victim while swimmer stays out of arm’s reach.
 - Once victim has settled down, tow to safety. Talk to the victim to reassure them.

Recovery

In recent years a lot has been written about the problems of recovering fishermen who have either fallen or been washed overboard. There is a variety of man overboard systems that are adoptable for most vessels and circumstances.

For fishing vessels without a dedicated rescue system the following options should be considered:

- A technique of circling a person in the water while towing a lifebuoy on a line is an effective way of making contact, particularly in heavy weather.

- A conscious person in the water can be recovered using a rigid ladder, scrambling net or any device that can be climbed.
- A lifting strap passed around the back and under the arms of a person in the water, attached to a suitable recovery rope, can prove valuable. Using a mechanical lifting device can assist recovery on board.
- An inflatable dingy or life raft provides another option for recovery. Your life raft can be inflated to get people out of oil/gas saturated water and heavy seas.
- A PARBUCKLE can be improvised using ropes or a net in order to recover a person from the water.
- REMEMBER — a rescuer should only enter the water as a last resort. Don't compromise your own safety.

Safety Tip

This safety tip concerns swimming fully clothed in cold water. Most people who accidentally find themselves in the water are fully clothed or without a lifejacket and suddenly recognize certain discomforts. Many good swimmers have not survived short distance swims due to improper techniques used when swimming fully clothed.

The key to swimming fully clothed is to use UNDERWATER MOVEMENTS with your hands and feet. Personal judgment is required concerning the removal of shoes or boots. Some boots will fill with water or become water soaked and restrict movement. Others may assist in your situation by providing environmental protection and floatation. Just remember swimming fully clothed requires strokes without lifting your arms out of the water.

The swimmer should use a BREAST STROKE, MODIFIED SIDESTROKE or an ELEMENTARY BACKSTROKE. You are not trying out for the Olympic team, just trying to get back to where you fell.

Man-overboard Recovery Methods

There are a number of man-overboard recovery methods. The most commonly used are:

1. *One-turn or Anderson*: fastest but requires the most skillful shiphandling.
2. *Williamson turn* for night or low visibility: turns you around and sends you down your previous track.
3. *Racetrack*: for the fastest recovery when you are proceeding at high speed in clear weather.
4. *Y-backing*: for ships with large turning circles and lots of backing power, proceeding at slow speeds.

Large ships often use a small boat to recover a man from the water. Smaller vessels will use the boat-recovery method as well when the sea is very rough or there is little chance of getting the man close alongside. Swimmers with PFDs or immersion suits and tending lines should be ready to go into the water.

No matter which recovery method is used, the same basic principles and methods apply. Swing the stern away from the person with full rudder. If possible, stop the shaft before the person reaches the screw. Always assign someone to do nothing but keep the man in the water in sight.

The following are step-by-step explanations of the four most common recovery methods.

WILLIAMSON TURN**Explanation:**

1) Put the rudder over full in the same direction as the man (this swings the stern away from him). For example, if a person fell over the starboard side, put the rudder over full to starboard. Stop the engine.

2) When clear of the man, go ahead with the engine. Continue using full rudder.

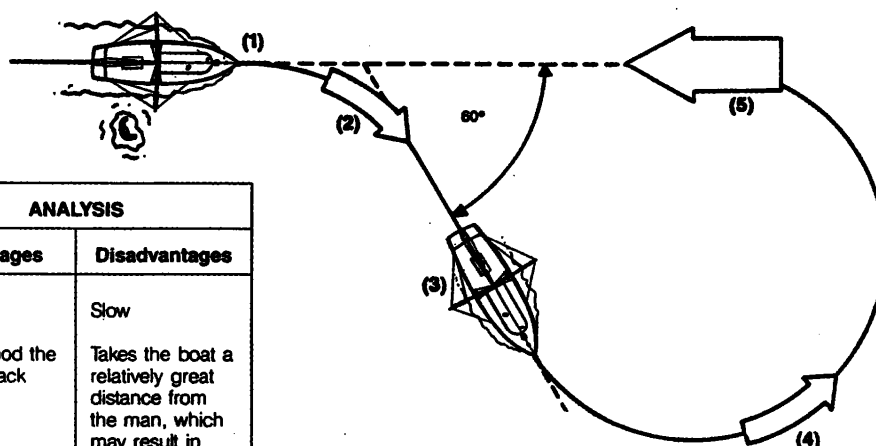
3) When the heading is 60 degrees beyond the original course, shift the rudder to full over in the opposite direction without having steadied on a course. 60 degrees is proper

for many vessels, but the exact amount must be determined through trial and error.

4) Come to the reciprocal of the original course, using full rudder. For example, if your original course was 090 degrees, you should be steady on 270 degrees after

turning.

5) Use the engines and rudder to get into proper final position: vessel upwind of the man and dead in the water with the man alongside, well forward of the propellers.



PRIMARY USE	ANALYSIS	
	Advantages	Disadvantages
Used in reduced visibility because it makes good the original track.	Simplicity	Slow
Used when it is believed that a man fell overboard some time previously but he is not in sight.	Makes good the original track	Takes the boat a relatively great distance from the man, which may result in losing sight of him

ANDERSON OR ONE TURN**Explanation:**

1) Put the rudder over full in the same direction as the man (this swings the stern away from him). For example, if a person fell over the starboard side, put the rudder over full to starboard. Stop the engine.

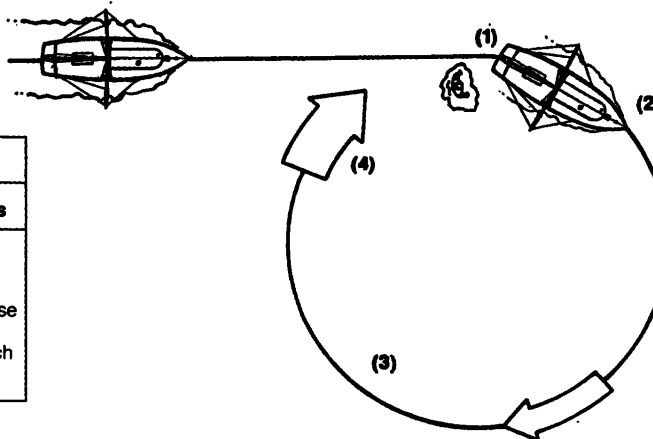
2) When clear of the man, go ahead full. Continue using full rudder.

3) When about two-thirds of the way around, back the engine two-thirds or full. Stop the engines when the man is within about 15 degrees of the bow, then ease the rudder and back the engines

as required to attain the proper final position (same as that for the Williamson method).

4) Many variations of this method are used. They differ primarily in the use of one or both engines on twin

screw vessels, and the moment at which they are stopped and backed to return to the man and tighten the turn. The variation used should reflect individual vessel characteristics, sea conditions, personal preferences, etc.



PRIMARY USE	ANALYSIS	
	Advantages	Disadvantages
Used by vessels which have considerable power available and a tight turning circle.	Fastest recovery method.	Requires very skillful ship-handling because of the lack of a straight approach to the man.

RACETRACK TURN

Explanation:

1) A variation of the one-turn method which provides a desirable straight final approach to the man.

2) Put the rudder over full in the same direction as the man (this swings the stern away from him). For exam-

ple, if a person fell over the starboard side, put the rudder over full to starboard. Stop the engine.

3) When clear of the man, go ahead full and continue using full rudder until you come to the reciprocal of the original

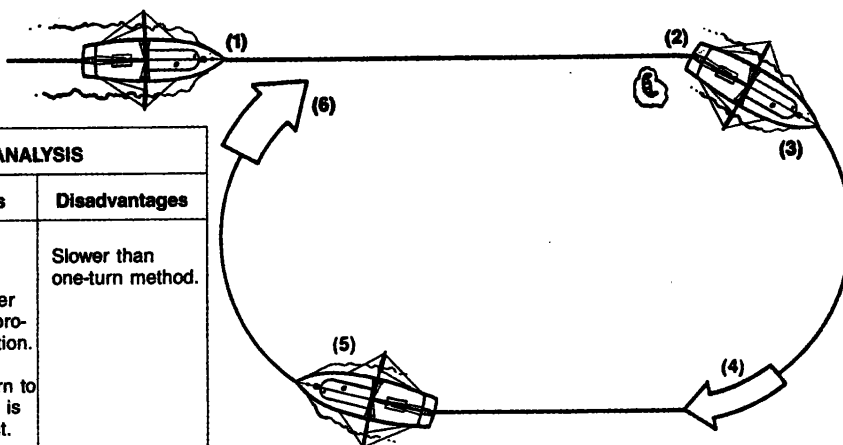
course. For example, if your original course was 090 degrees, steady up on 270 degrees after turning.

4) Hold the reciprocal course long enough so you can make a straight final approach to the man on the original course.

5) Use full rudder to turn to the man.

6) Use the engine and rudder to get in the proper final position (the same as for other recovery methods).

PRIMARY USE	ANALYSIS	
	Advantages	Disadvantages
Used in good visibility when a straight final approach leg is desired.	<p>Straight final approach leg makes it easier to attain the proper final position.</p> <p>Ship will return to the man if he is lost from sight.</p> <p>Reasonably fast.</p> <p>Effective when wind was from beam on original course.</p>	Slower than one-turn method.



Y-BACKING

Explanation:

1. Put the rudder over full in the same direction as the man (this swings the stern away from him). For exam-

ple, if a person fell over the starboard side, put the rudder over full to starboard. Stop the engine.

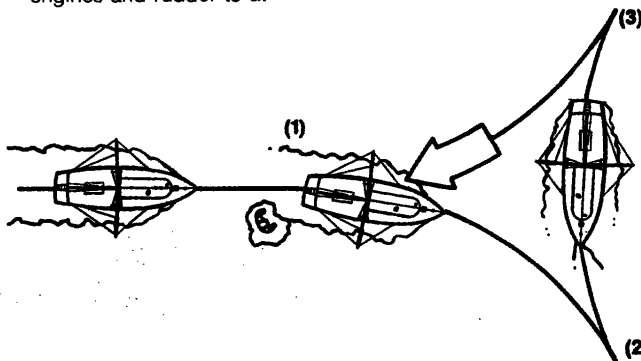
2. When clear of the

man, back the engine with full power, using opposite rudder.

3. Go ahead, using the engines and rudder to at-

tain the proper final position (same as for the other recovery methods).

PRIMARY USE	ANALYSIS	
	Advantages	Disadvantages
Used by vessels with low height of eye. The vessel remains comparatively close to the man, making it easier to keep him in sight.	The vessel remains comparatively close to the man.	Backing into the wind and sea may result in poor control of the vessel.



Rescuer Responsibilities

- Sound Alarm "MAN OVERBOARD"
- Throw a Flotation Device in Water
- Post a Lookout
- Turn Vessel Around
- Position Vessel for Retrieval
- Use Available Rescue Equipment
- Provide Medical Attention
- Rescue Swimmer

Victim Responsibilities

- Yell for Help / Whistle
- Assess Your Situation
- Control Your Breathing / Remain Calm
- Draw Attention to Yourself
- Stay Still — Do Not Swim
- Utilize Survival Skills
- Notify Rescuers of Any Injuries
or Other People in the Water

Cold Water Near-Drowning Survival Factors

- Water Temperature
- Cleanliness of Water
- Time Submerged
- Age of Victim
- Quality of Treatment
- Other Injuries

Abandoning the Vessel

Decision to Abandon

Only the captain should give the command to abandon the ship, and only when the ship is in such distress that the lives of the people on board are endangered. Abandoning ship signifies the end of attempts to save the vessel. It means that the raft has become the best shelter, if you have one.



Establish radio contact as soon as you recognize that an emergency exists. Update the log frequently to ensure that the man on watch can quickly report the vessel's position.

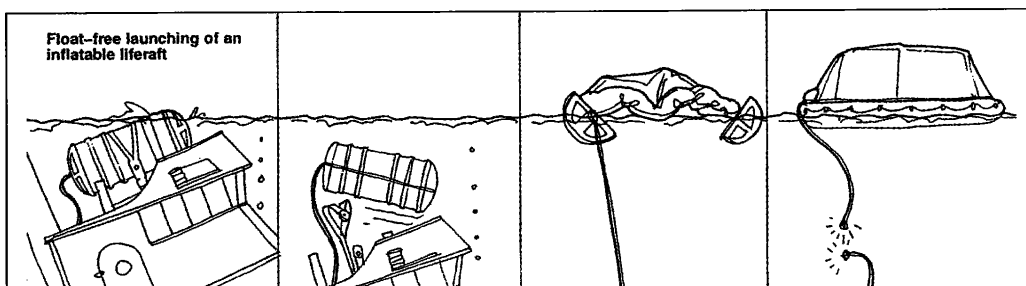
You must sound the alarm and alert the crew in plenty of time to enable them to get to their emergency stations and prepare the survival gear. It is much better to have to re-stow the survival gear after a close call than to wish you had assembled it sooner.

When the alarm sounds, each crewmember must report to his station immediately and begin his assigned survival duties.

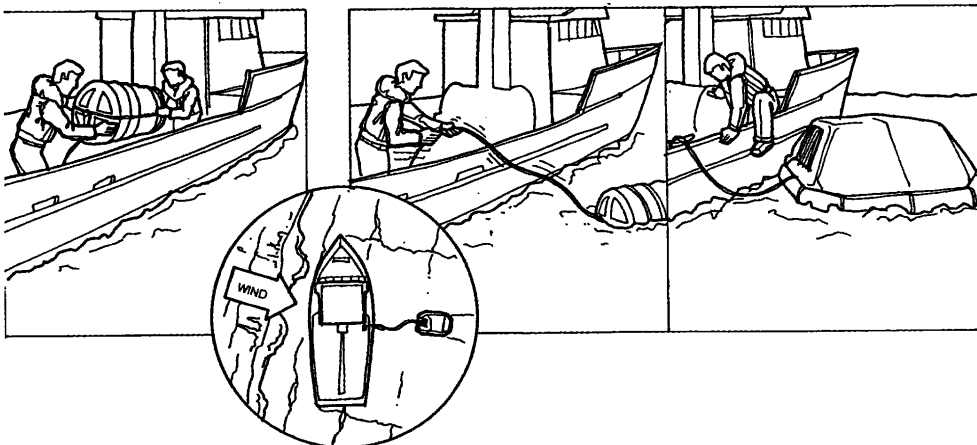
Where events do not allow for a well-organized abandonment, use whatever time is available to:

- Send a distress message.
- Muster all persons on board.
- Prepare the life raft for launching.
- Put a flotation device on.

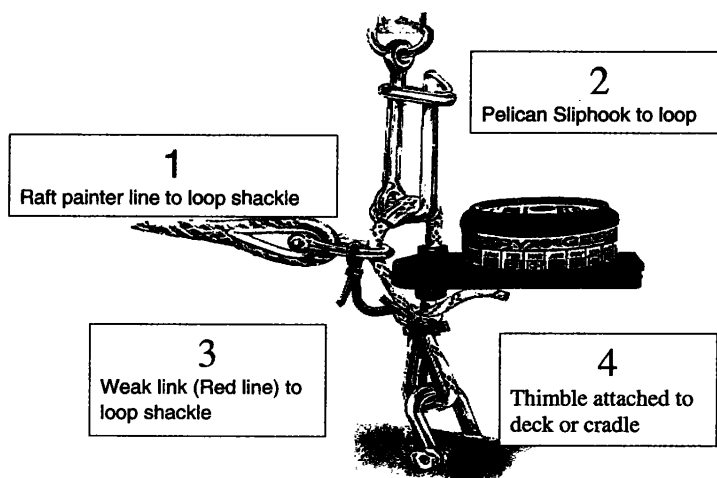
While it is a fatal mistake to wait too long to give the order for abandonment, it is just as dangerous to abandon the ship too soon.



At a depth of approximately 3 meters, the hydrostatic release is activated and the liferaft starts to float to the surface. As the vessel sinks, the painter pays out to full length and activates the CO₂ cylinder to inflate the liferaft. The painter must be pulled out manually to its full length to activate the inflation mechanism if the water depth is less than the length of the painter. Swim to the raft, place your feet on the cannister and pull until the raft inflates. If the vessel continues to sink, the painter or a weak link parts and the liferaft floats free.



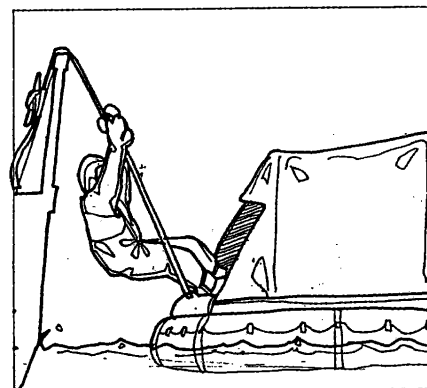
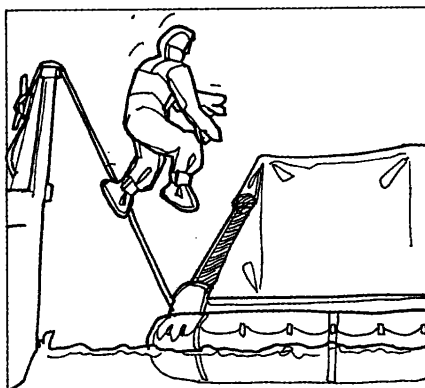
The raft should be launched from the lee side (left). There may be as much as 100 feet of painter in the cannister and pulling the painter out to its full length (center) will inflate the raft. Be sure the painter is firmly secured to the vessel (right) before launching and inflating the raft.



Disposable hydrostatic release installation

Boarding the Liferaft

Wait for the raft to inflate before boarding. If you board too soon you may interfere with the raft's inflation. Your raft will probably over-inflate and you will hear the sound of air escaping through pressure relief valves. This does not mean that the raft is defective. The sound should stop in a few moments.



If possible, board the raft without getting wet. You can jump directly into the canopy opening (left) or lower yourself with a ladder, net or line (right).

The best way to board your life raft is to jump directly into the canopy opening from your vessel, remaining DRY. You will not go through the floor.

Jump feet first into the canopy opening with your hands landing on the top of the canopy. Once in, move away from the opening so other crewmen can board.

If you must enter the water, choose a safe place to leave the vessel. Enter where you can use the painter line to guide you to the raft. If you are not in contact with the painter line, you may be swept beyond the raft.

Beware of hazards below you. Do not jump into people, objects or surface debris. Jump from the lowest suitable point to minimize impact with the water. Consider using a ladder, net or line to lower yourself to a safe point of entry.

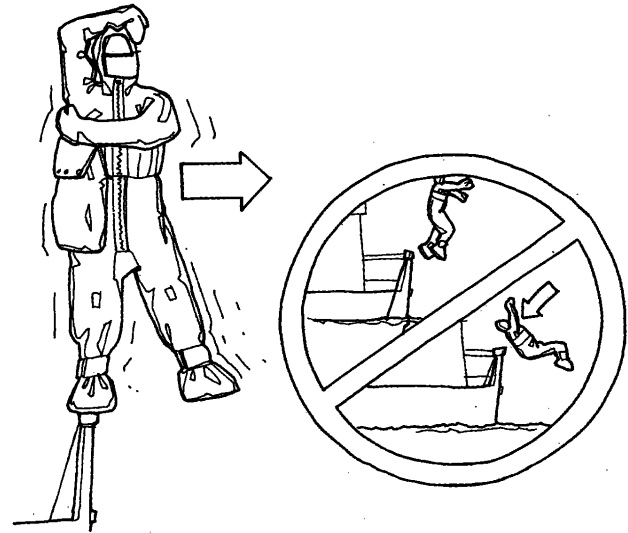


If you must enter the water wearing a PFD, cross your arms securely over your chest and block off your nose and mouth. Always enter the water feet first, with your feet together.

Entry from a Height

Once the decision is made to abandon the vessel, the following procedures should be utilized.

- Get down as close to the water as possible and secure your PFD / Immersion Suit.
- Look down to see if your landing area is clear.
- Look straight ahead and stand tall.
- Latch on with one hand on face to protect mouth and nose from inrushing water. The free hand is placed across the chest and grabs onto the elbow or shoulder and squeeze down on the PFD.
- Step off as you were walking down a set of stairs. Cross your ankles or keep feet close together.
- Assist others and move to a safe area. Swim on your back.



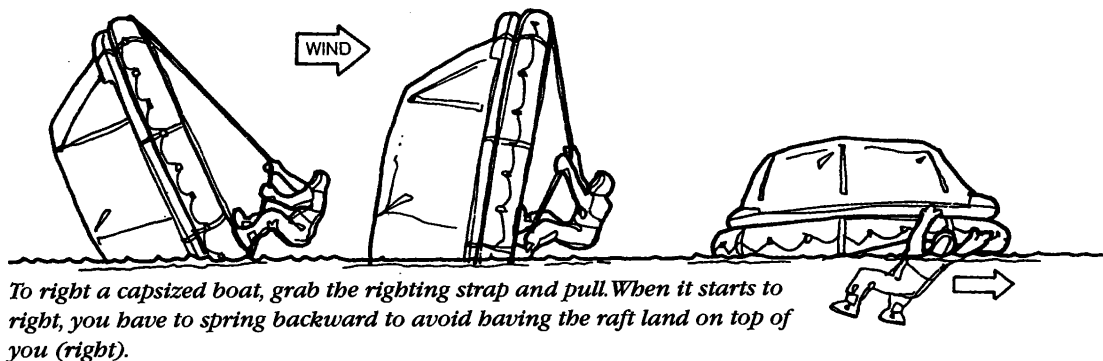
If entering the water in an immersion suit, protect your head with one arm and jump to the side. If you jump facing forward (right), a slip is more likely to cause a head injury.

Righting a Capsized Liferaft

If your liferaft inflates upside down or is blown over during inflation, DON'T PANIC. One person can easily right a capsized craft. Swim to the side marked "RIGHT HERE." If there is no marking, go to the side with the CO₂ cylinder. Maneuver the cylinder side of the raft so that it is downwind, then reach up and grab the righting strap. Start pulling yourself up onto the raft. It will help to kick your feet out as if you were swimming on top.

This will be difficult as you will have on a flotation device. GET AGGRESSIVE!

Once on top facing into the wind, stand on the very edge where the CO₂ cylinder is located. Holding onto the righting strap, lean back with all your weight and pull on the strap. Once the canopy is clear of the water, the raft will begin to follow. If the raft lands on top of you, relax. The bottom (floor) of the raft is soft and flexible and your head will form an air pocket.



To right a capsized boat, grab the righting strap and pull. When it starts to right, you have to spring backward to avoid having the raft land on top of you (right).

Stay face up under the raft. Catch a breath of air and pull yourself out from underneath. If you try to swim out face down, your PFD or immersion suit could get hung up and make it difficult for you to get free.

Survival Once On Board

- Deploy the sea anchor (drogue). Some may automatically deploy. Make sure it is out and functioning properly. When the raft is on the wave crest, the sea anchor should be in the trough.
- Bail out the raft using bailing bucket and sponge provided. Hands, shoes and caps are also useful.
- Close down the entrance to protect the crew from exposure.
- Maintain your raft. Inflate the floor and repair any leaks. It may be necessary to re-distribute your weight to better stabilize your new home.
- Tend to the injured with the first aid kit contained in the emergency pack. If you have not attended a first aid class before or lack confidence in your medical skills, it would be advisable to sign up for a course. Remember, ma-in-law may choke on your T-bone and the skills learned may be useful.
- Locate your survival manual and read instructions aloud for all to hear.
- Assess the scene and make a calm estimate of your situation and plan your course of action. Assign duties to all uninjured.
- Inventory your emergency pack contents and don't leave items lying around on the floor. Distribute seasick tablets to all even if they have never been seasick. They have never been in a life raft in the open sea.
- Post a look-out team. Activate your EPIRB and review the proper use of visual distress signals.
- Check the condition of everyone. Use the buddy system to assist each other. Maintain morale and consistent leadership. Use your sense of humor; it is a powerful tool.
- Distribute food and water but be careful not to waste it. Drink NO seawater even if diluted. Eat NO fish, turtles or birds that may come near the raft. The fishing kit is for morale, not to eat the fish even if you can cook them with your flare.
- PLAN TO STAY ALIVE AND RETURN HOME TO THE FAMILY!!

Actions Prior to Abandonment

- Alarm Recognition
- Muster Location
- Personal Shelter Management (Dress for Survival)
- Recognize Specific Emergency Duties
- Equipment Familiarization
- Specialized Team Development
- Communications

Hazards Complicating Evacuation

- Night-Time Evacuation
- Injuries
- Missing Person
- Faulty or No Equipment
- Poor Weather Conditions
- Panic and Fear
- Lack of Leadership
- Inexperienced Crew

Initial Hazards Once in the Water

- Injuries During the Fall
- Cold Water
- Oil & Fire
- Surface Debris
- Dangerous Marine Life
- Missing and Injured Crew
- Crew Separation
- Lack of Preparation

Sample Briefing to Pass to Vessels Prior to Hoisting

“A Coast Guard helicopter is proceeding to your position and should arrive at approximately _____. Maintain a radio watch on _____ MHz / kHz Channel _____ VHF / FM; the helicopter will attempt to contact you. Provide a clear area for hoisting, preferably on the port stern. Lower all masts and booms that can be lowered. Secure all loose gear. Keep all unnecessary personnel clear of the hoist area. When the helicopter arrives, change course to place the wind 30 degrees on the port bow and maintain a steady course and steerageway. As the helicopter approaches, gale force winds may be produced by the rotors, making it difficult to steer. The helicopter will provide all of the equipment for the hoist. A line will probably be trailed from the helicopter for your crew to guide the rescue device as it is lowered to the deck. Before handling the rescue device, allow it to touch your vessel. This will discharge static electricity. If you have to move the rescue device from the hoist area to load the patient, unhook the cable from the rescue device and lay the loose hook on the deck so the helicopter can retrieve it. Do not attach the loose hook or the cable to your vessel. The helicopter may move to the side while the patient is being loaded. Have the patient wear a lifejacket and attach any important records, along with a record of medications that have been administered. If possible, brief the patient on the instructions pictured on the rescue device. When the patient is securely loaded, signal the helicopter to move into position and lower the hook. After allowing the hook to ground on the vessel, re-attach it to the rescue device. Signal the hoist operator with a “thumbs up” when you are ready for the hoist to begin. As the rescue device is being retrieved, tend the trail line to prevent the device from swinging. When you reach the end of the trail line, gently toss it over the side.”

Actions Prior to Rescue

- Follow Instruction from Crew
- Tend to Injured / They Go First
- Transfer Organization
- Prepare Safety Line for Transfer
- Wear Flotation During Transfer
- Stay in Raft if Transfer is Unsafe
- Take your Time. You're Almost There.

Guidelines for Hoisting to CG Helos

Initial Communications

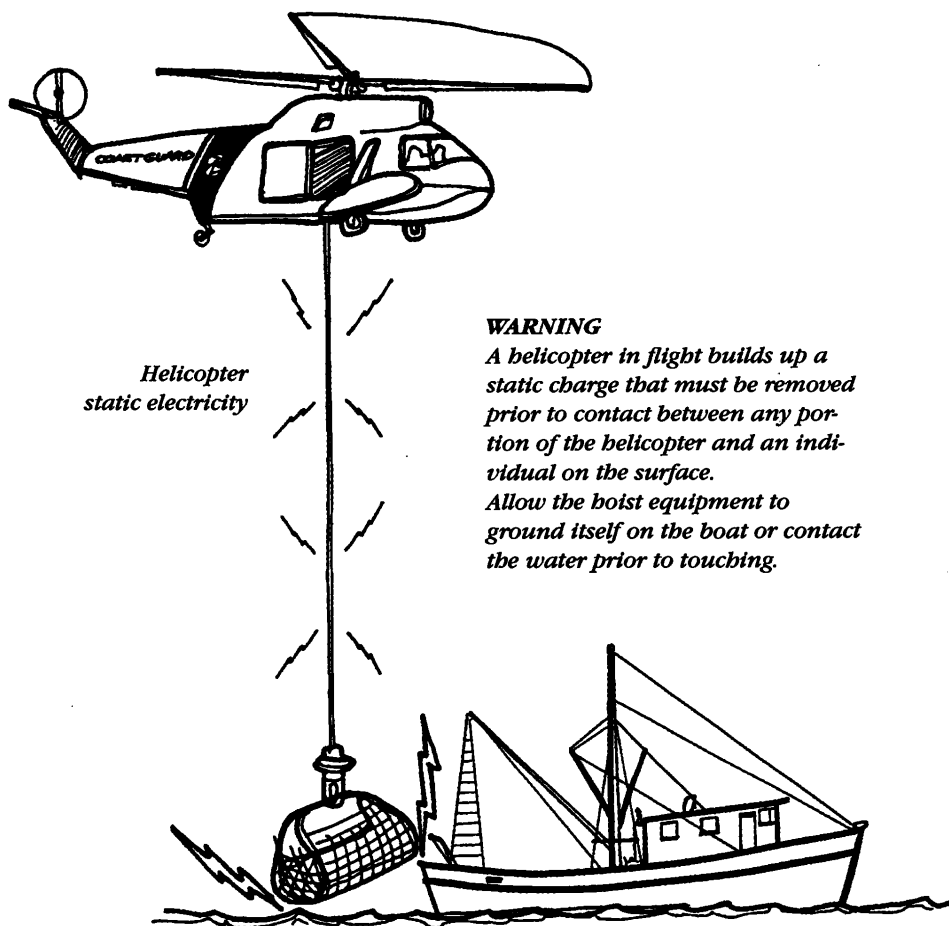
- Position (latitude / longitude)
- Any Injuries
- State of Vessel
- Signaling Devices Onboard
- Open Areas to Hoist to (usually port quarter)

Preparation for Hoisting

- If Underway: Bow Facing 30-45 right of wind line
- If DIW: Bow Facing 0-90 right of wind line
- Clear Hoisting Area: snag hazards, antennae, booms
- Life Jackets
- Somebody on Radio if Possible

During Hoisting

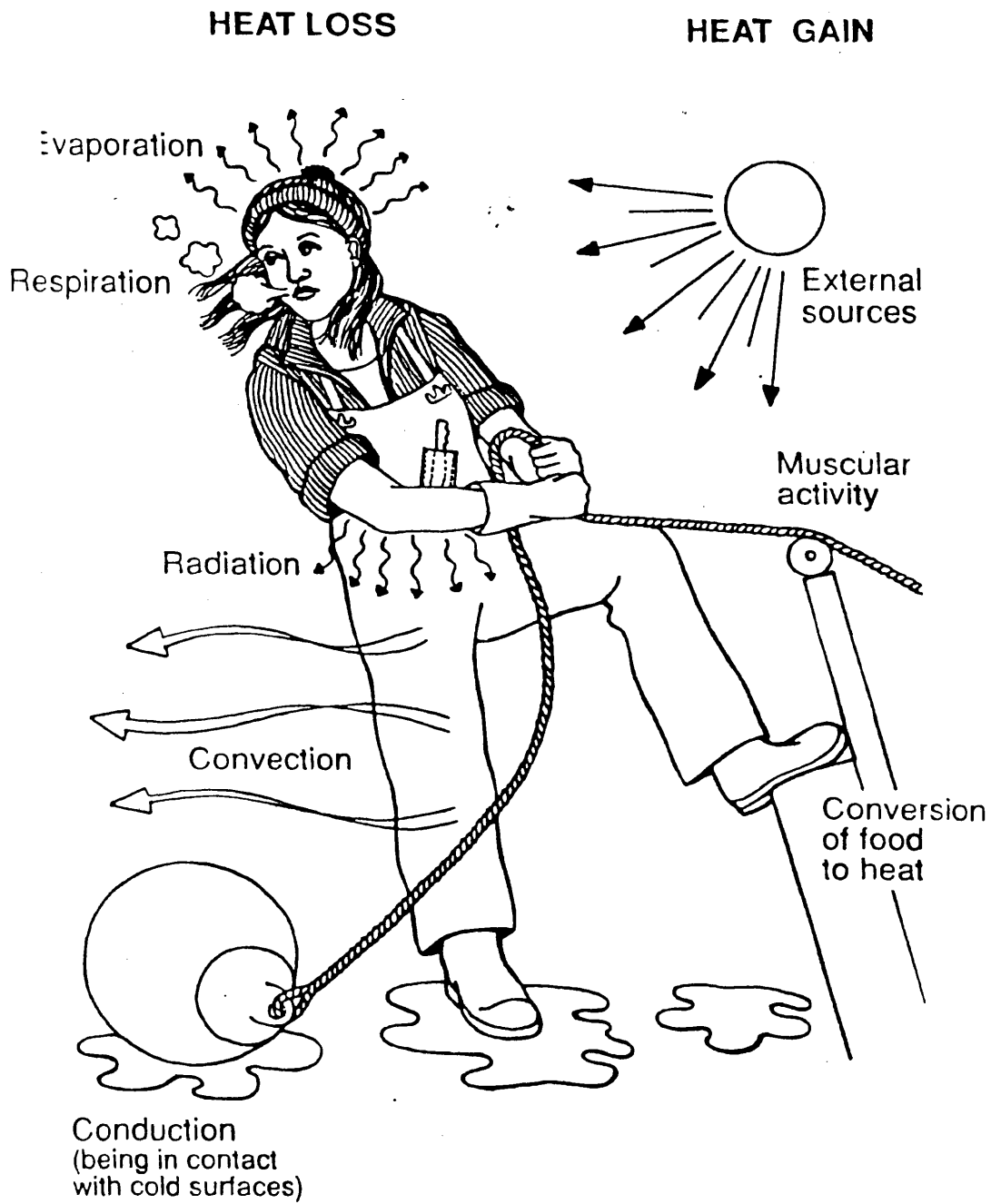
- Ground the Device
- Tending Trail Line
- Disconnecting Device (Don't hook cable to boat)
- Any Problems: Advise immediately over radio



STAY Rules-Seven Steps to Increase Your Odds of Survival

The following seven “STAY” rules will greatly improve your chances of surviving abandon ship emergency. They are from the AMSEA Marine Safety Instructor Training Manual, and have been “tested” during real marine emergencies.

- • **1. STAY Afloat:** wear a PFD and stay on top of floating objects, like the boat.
- • **2. STAY Still:** conserve heat and energy.
- • • **3. STAY Dry:** keeping your body out of the water will reduce heat loss through
- • • conduction.
- • • **4. STAY With the Boat:** the boat can be useful as something to hold on to and it will make you a bigger target.
- • **5. STAY Warm:** get out of the water, if possible. Protect your high heat loss areas.
- • **6. STAY Together:** it makes you an easier target, improves morale, and can reduce heat loss by using the HUDDLE position.
- • **7. STAY Sober:** alcohol increases heat loss and decreases judgement and coordination.



Hypothermia and Cold Water Survival

Hypothermia occurs when the body's CORE temperature drops. Submersion in cold water is a major cause of hypothermia because water conducts heat away from the body 25 times faster than air of the same temperature. Hypothermia can also result from a combination of wind and cool or cold temperatures, wet clothing or clothing that is not suitable for the weather.

Although hypothermia can easily occur when air temperatures are above freezing, it can be prevented by using good judgment, wearing layered clothing to stay warm but not sweaty, putting on rain gear before getting wet, and avoiding being immersed in cold water. It helps to remember that 50 percent of your body's heat is lost through your HEAD and NECK. Other high heat loss areas are your ARMPITS, CHEST and GROIN.

Signs and Symptoms

- | | |
|---------------------------|----------------------------|
| ■ Uncontrolled shivering | ■ Slurred / slow speech |
| ■ Confusion | ■ Poor judgment |
| ■ Poor coordination | ■ Drowsiness |
| ■ Weak or irregular pulse | ■ Slow / shallow breathing |
| ■ Dilated (big) pupils | ■ Unconsciousness |

It is sometimes difficult to detect hypothermia because the affected person may not know or may deny that he is having a problem. In addition, signs and symptoms may be confused with or complicated by alcohol.

If you suspect that someone has hypothermia, check the person's pulse for 1 to 2 minutes when doing your primary survey. Treat the person GENTLY. If he is breathing and has a pulse, carefully remove his wet clothing and cover him with dry coverings.

To treat for hypothermia, remove the person from the cold environment and remove any wet clothing. Encase the individual in a sleeping bag and provide skin-to-skin contact with a warm person.

Give warm fluids only after uncontrolled shivering stops, when the person is alert enough to get a cup of hot drink to his mouth by himself without spilling it and can swallow without choking.

Check for and treat other injuries.

3 Stages of Hypothermia

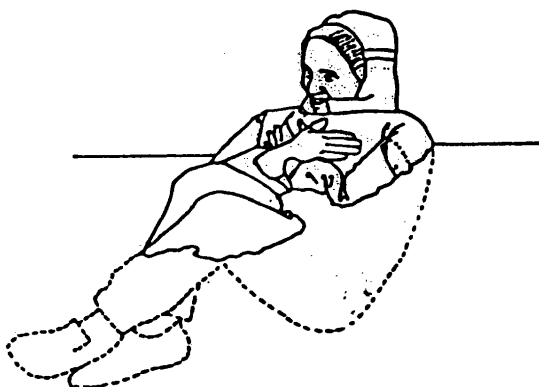
Stage	Core Temperature	Signs & Symptoms
Mild Hypothermia	99° - 97°F Normal; Shivering can begin 97° - 95°F	Cold sensation and goose bumps. Unable to perform complex tasks with hands. Shiver can be mild to severe. Hands numb.
Moderate Hypothermia	95° - 93°F	Shivering intense. Muscle incoordination becomes apparent. Movements slow and labored, stumbling pace, mild confusion, may appear. Use sobriety test, if unable to walk a 30 foot straight line, the person is hypothermic. At 93° - 90°F, violent shivering persists, difficulty speaking, sluggish thinking, and amnesia starts to appear. Gross muscle movements sluggish. Unable to use hands, stumbles frequently, and difficulty speaking. Signs of depression, withdrawn.
Severe Hypothermia	90° - 86°F	Shivering stops. Exposed skin blue or puffy. Muscle coordination very poor. Inability to walk, confusion, incoherent/irrational behavior, but may be able to maintain posture and appearance of awareness At 86° - 82°F, muscle rigidity, semiconscious, stupor, and loss of awareness of others. Pulse and respiration rate decrease, possible heart fibrillation At 82° - 78°F, Unconscious. Heart beat and respiration erratic. Pulse may not be palpable At 78° - 75°F, pulmonary edema, cardiac and respiratory failure. Death may occur before this temperature is reached.

Preventing Drowning on Initial Immersion

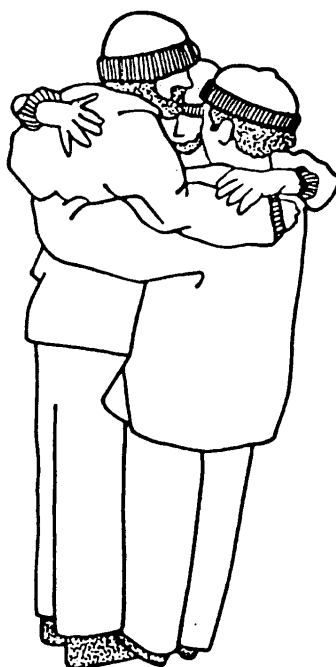
- **Protective Clothing**
- **Flotation**
- **Slow Entry for Slow Response**
- **Climatize**
- **Body Type (Fat vs. Muscle)**
- **Survival Techniques (Wave Spray Protection and Survival Swimming)**
- **Stay Out of Water**

HELP

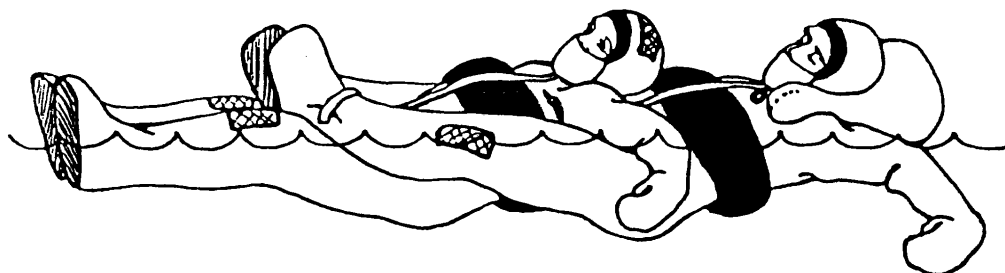
(Heat Escape Lessening Position)



Huddle Position



Chain Swim



Minimizing the Effects of Unintentional Flooding

Approximately 70 percent of deaths involving commercial fishing industry vessels are related to stability. Maintaining proper stability on fishing vessels is one of the most difficult tasks for the fisherman. The more you learn about stability, especially the stability limit of your own boat, the safer you can be.

The most important concept for you to concern yourself with while fishing and stowing catch is to keep to a minimum the number of stability hazards present at the same time. For instance, while you are lifting the cod end aboard, be aware of the hazards posed by an open hatch. Be aware of the effects of shifting catch on deck, or of partially filled fish hold or ballast tank.

Stability changes with every gallon of fuel, ice and water that is used. It changes with every shift in ballast and with every load of fish; it makes a difference whether you put the cargo down below or on the deck. Finally, the stability of your boat changes with every wave that passes under the boat since the stability varies with the position of your vessel on the wave.

Common Small Vessel Flooding Sources

Small hull breach:
Located here possibly from impact with floating debris such as logs. Also possible from impact on hull by fishing gear, or in structural failure of wood hulls (broken framing).

Damaged rudder port fittings:
Packing problems with rudder posts results in many flooding cases. Structural failure (cracking) of the fitting housing has also been observed.

Large hull breach:
Known to result from impact from fishing gear (otter doors, etc.). Can also result from grounding and collision-type accidents.

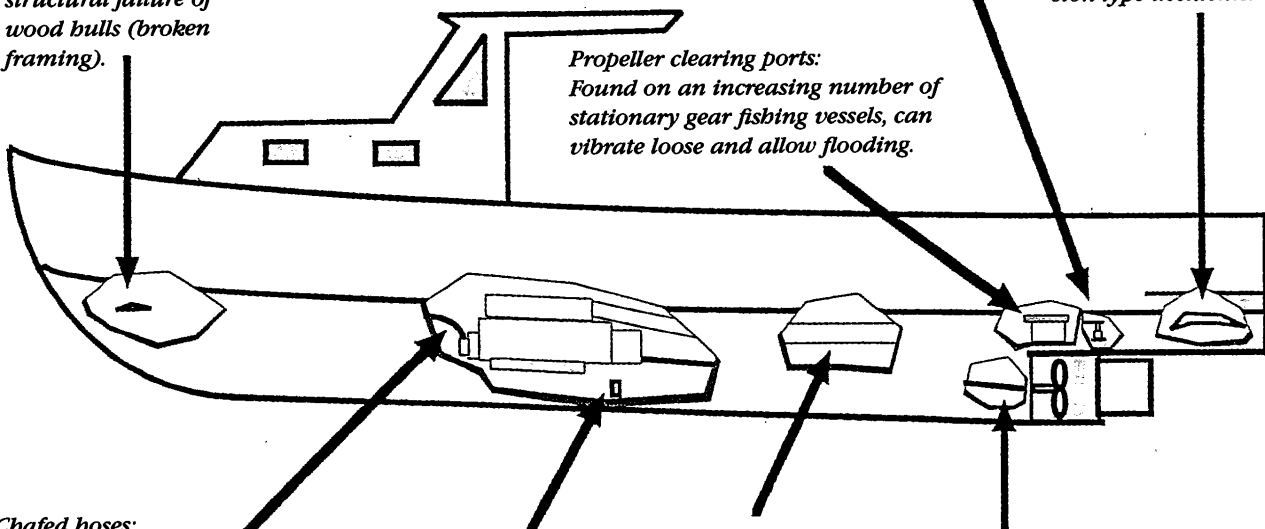
Propeller clearing ports:
Found on an increasing number of stationary gear fishing vessels, can vibrate loose and allow flooding.

Chafed hoses:
Resulting from vibration damage to hoses in washing and engine cooling systems.

Open seacocks:
Resulting from corrosion damage or improper hose connections.

Split piping:
Freeze damage to wet exhaust lines, or failures in pump system piping.

Main shaft packing gland:
A perpetual maintenance problem on boats, can also result from emergency maneuvers with fouled propellers.



Some Suggestions for Preserving Adequate Stability

The United States Coast Guard, in conjunction with the Commercial Fishing Industry Vessel Advisory Committee, recommends the following measures. You should consider this as preliminary guidance on matters influencing the safety of fishing vessels as specifically related to preserving vessel stability.

- All doorways and other openings through which water can enter the hull or deckhouses should be closed in adverse weather and when not in use.
- All closure devices should be maintained on board in good working condition.
- Hatch covers and flush deck scuttles should be kept securely closed when not in use during fishing.
- All deadlights should be maintained in good condition and securely closed in bad weather.
- All fishing gear and other large weights should be stowed, prevented from shifting and placed as low as possible.
- Care should be taken to maintain pull from fishing gear in line with the vessel's longitudinal centerline and to avoid maneuvering with trawls off the quarters or beams. (Trawls off the quarters or beam generate tremendous overturning forces that can easily capsize a vessel).
- The point of action of the weight is at the hoist block of the frame or point of suspension. (Haul back pull points should be shifted to lower points during trawl operations.) This lessens the magnitude of potential overturning forces generated when the trawl moves off the longitudinal centerline of the vessel.
- The gear to release the deck load on fishing vessels that carry catch such as herring on deck should be kept in good working order for immediate use when necessary.
- Freeing ports in bulwarks should always be open while underway
- When the weather deck is prepared for the carriage of deck loads by division with pound boards, there should be slots between them for adequate size to allow an easy flow of water to the freeing ports, *i.e.*, good drainage.
- Never carry fish in bulk without first being sure that the portable divisions in the fish hold are properly installed. **THE CARGO MUST NOT SHIFT!!**
- Minimize the number of partially filled tanks. Free surface can severely impair your vessel's stability.
- Observe any instructions given regarding the filling of water ballast tanks. Remember that partially filled tanks can be dangerous. They generate free surface.
- Closing devices provided for vents to fuel tanks should be secured in bad weather.
- Be alert to the danger of following or quartering seas. These may cause heavy rolling and/or difficult steering. If excessive heeling or yawing occurs reduce speed, alter course or both.
- Do not overload. Overloading increases draft and decreases reserve buoyancy, which decreases stability.
- Avoid icing conditions. Standing wire rigging will ice up to a greater extent than struts or yards. If icing cannot be controlled, leave the area.
- Maintain at least 1 foot of freeboard at all times.

Preserving Water Integrity

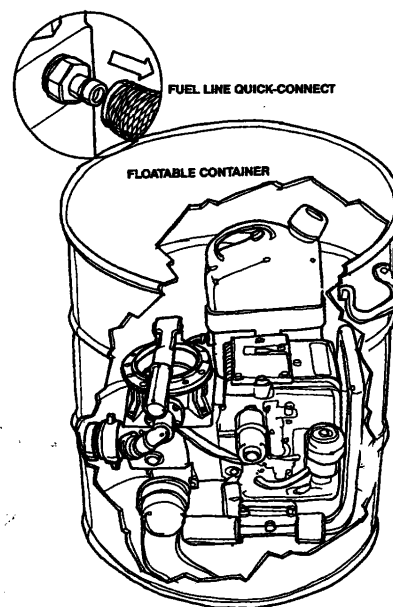
1. All watertight compartments should have a means of being pumped. In one-compartment type vessels, there should be at least two bilge suctions with one at the deepest part of the bilge and one at the stern.
2. All valves and pumping systems should be marked as to function.
3. Bilge water level alarms should be installed in all watertight compartments. Alarms are to be audible and visible.

Damage Control / Emergency Repair

1. Prior to vessel departure, inspect condition and proper working order of all engines, auxiliary motors, impellers, hoses and valves, which make up the pumping system.
2. All bilge suction lines shall be provided with screens.
3. Bilge is to be kept free of debris to ensure proper discharge of bilge water.
4. Spare parts and engine repair kits should be stowed aboard in the event that a pump system needs repair.
5. Materials such as steel plate patches, repair clamps, wooden plugs or any material that can be used to stop water from entering the vessel and the tools needed to fasten or hold the material in place, shall be stowed aboard.

Dewatering Equipment and Techniques

1. A minimum of two pumping systems, capable of pumping all compartments, should be installed with each pump powered from independent sources such as a main engine, generator or auxiliary engine.
2. The salt water systems should be insulated from the bilge pumping system and all bilge suction should have check valves installed.
3. If the same pump is used for bilge and deck wash down purposes, a three-way valve must be installed and discharge line provided with a vent. No shutoff can be installed in the vent line.
4. When conditions do not allow for self-priming pumps, a raw line may be installed, provided it meets the following:
 - Shutoff valve is installed well above waterline.
 - Prime line is routed well above waterline.
 - Discharge pipe is vented on deck.
5. Delivery of Coast Guard Dewatering Pumps
 - Transmit proper MAYDAY following the written procedures.
 - Be sure to notify USCG about your situation, since pre-flight preparations include loading the proper gear for the type of emergency, *i.e.*, sinking needs pumps.
 - The Coast Guard will deliver a pump one of two ways, depending on distance from shore and sea condition — the direct method by air or the indirect method by jet.
 - Pump will be delivered inside a floatable container.



General Safety Instructions for Coast Guard Dewatering Pumps

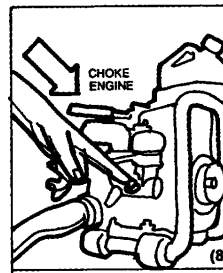
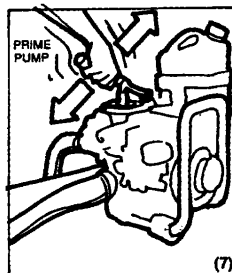
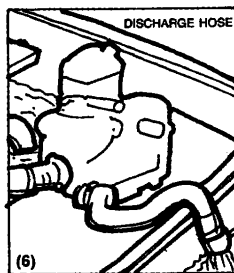
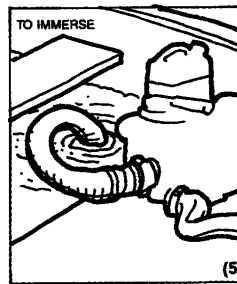
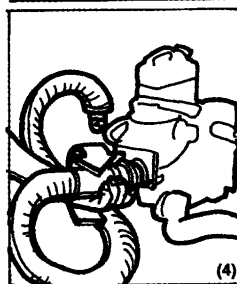
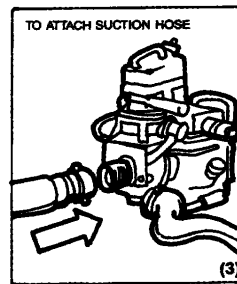
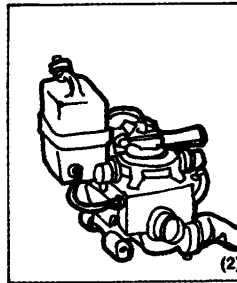
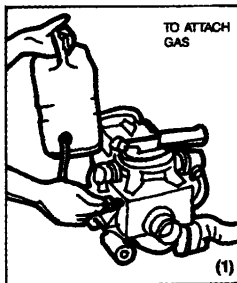
Safety Instructions

- Refuel only in well-ventilated areas.
- If gasoline is spilled, move pump away from spill.
- Do not refuel gasoline tank while engine is running.
- Do not run engine in an enclosed area. Exhaust gases contain carbon monoxide, an odorless, colorless poison.
- To prevent accidental starting, always remove the spark plug before working on the engine or equipment.
- Do not tamper with the exhaust system.
- Do not operate the engine if the air cleaner is removed (except for adjustment).
- Always keep hands and feet clear of rotating parts.
- Do not disconnect either suction or discharge hose during pump operation.
- Do not check oil or fuel level while the engine is running.
- Use caution handling pump during and after running until engine has cooled.

Sample Instructions for the Dewatering Pump

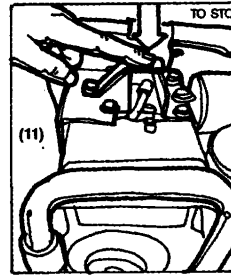
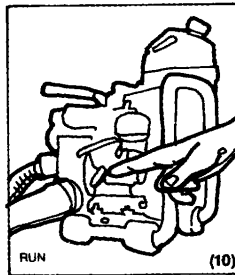
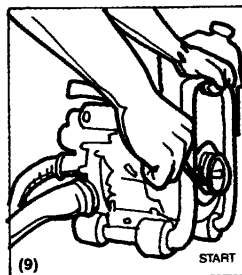
A. Before starting pump

- Mount fuel tank to engine and connect fuel line to quick connect/disconnect fitting (1,2).
- Put strainer end of suction inlet hose into water being pumped and connect coupling to pump. Be sure strainer and end of hose are submerged. If air gets into inlet hose or strainer, the pump will not pump. If strainer is not used, large solids may plug or damage the pump (3,4,5).
- Outlet (discharge) hose should be laid out with minimum kinks or sags and placed overboard (6).
- Prime the pump with water by actuating hand pump until water discharges from plastic outlet of the hand pump (7).
- Place choke lever on engine to "choke" (8).



B. Operating pump:

- Wrap starter rope on pulley and pull (9).
- After second pull (if engine hasn't started), set choke half way and crank again. Then set choke at 1/4 to prevent flooding the engine.
- After starting, adjust choke for best operation (10).
- After pump and engine are started, actuate hand priming pump until pump is pumping water.
- Be sure inlet hose and strainer are kept under water.
- Stop engine before adding gasoline (11).
- Keep pump and engine as nearly level as possible.



C. To stop engine and pump:

- Disconnect fuel line. Engine will continue pumping for approximately one minute and then stop.
- When finished pumping, drain and flush the pump and hoses with fresh water.

Damage Control Kit

Every vessel should have tools and materials on board for damage control. The items should be assembled and stored in a damage control kit. This kit should be stored where it is easily accessible, and up out of potentially flooded areas. In addition, all crew members should be aware of the kit and familiar with the uses of its contents.

Suggested content items are listed here. Some of these items may be omitted, or others might be added based on vessel design.

PLUGS & PATCHES

- Wedges
 - Various sizes
 - Soft wood that swells when wet
- Tapered Plugs
 - Two per sea cock: one in kit; one attached to sea cock
 - Soft wood that swells when wet
- Rubberized Strips and Sheets
 - Gasket material
 - Rubberized cloth
 - Inner tube strips
- Neoprene Fabric (such as pieces of old immersion suits)
- Rags
- Scrap Hose
- Nerf® Ball(s)
- Silicon or Graphite Impregnated Fiber
- Waterproof, Nonhardening Putty
- Plastic, Canvas or Nylon Tarp(s)

Produced by
Alaska Marine Safety Education Association – www.amsea.org
with assistance from
17th U. S. Coast Guard District Alaska – www.uscg.mil/d17/
&
Commercial Fishing Industry Vessel Safety Advisory Committee

Damage Control Kit

FASTENERS

- Grease Tape
- Duct Tape
- Bicycle Inner Tube Tape
- Hose Clamps in Various Sizes
- Wire Ties
- Twine
- Oakum
- Waterproof Epoxy & Backing Material

TOOLS

- Knife
- Shears
- Hacksaw
- Hammer
- Hatchet
- Screw Driver(s)
- Pipe Wrench
- Crescent Wrench
- Cordless Drill
- Nut Driver(s) including 5/16" for hose clamps
- Wooden or Rubber Mallet



DON'T FORGET . . .

- Storage Container With Light Attached to Handle
 - Small plastic tote with handle & snap on lid
 - Five-gallon plastic bucket with handle & lid
 - Duffle bag
- Waterproof Flashlight(s)
- Battery-Powered Headlamp
- Hand-held VHF Radio

Vessel Damage Control



**Quick Reference
Guide
&
Suggested Damage
Control Kit Contents**

Quick Reference Damage Control

ASSESS THE DAMAGE

- Determine if it is leaking or flooding
- Determine whether or not available pumps can keep up
- Alert crew to situation and see that they are prepared to abandon ship if it becomes necessary
- Ensure that all crew are prepared to assist as needed
- Alert the Coast Guard of the situation
- Determine if it is safe to enter the flooded compartment and attempt damage control
- If so, trace the source of the flooding

TABLE OF FLOODING RATES (Gallons Per Minute)

Distance below waterline	Diameter of Opening in Hull (Inches)							
	1"	1.5"	2"	2.5"	3"	3.5"	4"	6"
1'	20	44	79	123	177	241	314	707
2'	28	62	111	174	250	340	444	1000
3'	34	77	136	213	306	417	544	1,224
4'	39	88	157	245	353	481	628	1,414
5'	44	99	176	274	395	538	702	1,581
6'	48	108	192	301	433	589	770	1,731
7'	52	117	208	325	468	636	831	1,870
8'	56	125	222	347	500	680	889	1,999
9'	59	133	236	368	530	722	942	2,121
10'	62	140	248	388	559	761	993	2,235

CONTROL THE DAMAGE

- If possible, isolate flooding by closing watertight doors and hatches
- Shut down generator and inverters to reduce electrocution risk
- Disengage machinery that may make working in flooding area hazardous
- Jam materials into the breach to slow the flow of water
- Wrap cloth or other material around wedges and plugs for a tight fit



- Bolster patches or plugs with shoring or nail-on patching
- Lay a tarp against outside hull and secure over the breach
- Use pumps to remove as much incoming water as possible
- Water may come from more than one source. Identify and stop all sources of flooding
- Remember to give the Coast Guard regular updates as the situation progresses
- Close off above-the-waterline holes, such as drains and discharges that can siphon water into the boat should it sink below their levels
- Ensure that patches are secure before attempting to get underway
- If grounded, ensure hull is watertight before refloating
- Maintain a watch at the source(s) of the flooding

Fire Prevention and Fire Fighting

Fire is even more dreaded at sea than it is ashore. Fishermen faced with a fire at sea can neither call for professional help nor run away from the danger. Short of abandoning ship in favor of a tiny life raft, they must stay onboard and fight the fire themselves whether or not they have any training.

I hope this training program encourages further fire-fighting training, as the time spent today is minimal. I would encourage all participants to contact your local fire department and ask to attend/participate in their portable fire extinguisher training.

Coast Guard statistics reveal that most fires aboard fishing vessels occur in UNATTENDED MACHINERY SPACES. Typical causes include broken fuel or lube oil lines that spray fuel on hot engine parts, faulty electrical systems, uninsulated exhaust in contact with flammable materials, rags or other combustibles in the vicinity of hot engines, and spontaneous combustion of oil soaked rags. Other potentially high fire danger areas are accommodation spaces and galleys.

Prevention

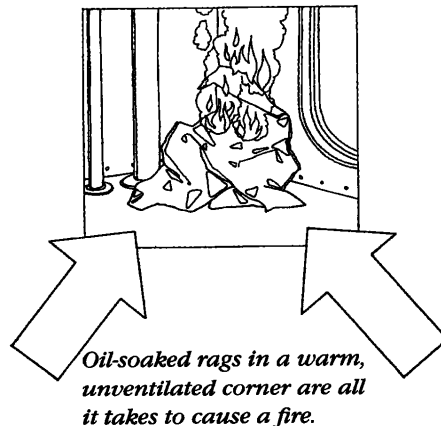
- Constant awareness of the danger of fire is the responsibility of each and every crewman. Carelessness is a chief cause of fire aboard vessels.
- Each crewman should be:
 - Alerted to common fire hazards and taught how to eliminate them.
 - Advised of his duties in the event of fire.
 - Aware of all means of escape from interior spaces.
- Restrict the use of combustible materials when building, repairing and/or maintaining the vessel.
- Ensure the proper installation of fuel, lube and hydraulic oil lines.
- Exhaust systems are to be properly wrapped and engine rooms, cargo spaces and fuel tanks adequately vented.
- Unattended spaces should be equipped with fire and smoke detectors and alarm systems.
- Vessels must have adequate fixed fire extinguishing systems and/or portable fire extinguishers.

Causes

Spontaneous Ignition

Placing an oil-soaked rag in a storage area or engine room is an excellent candidate for spontaneous ignition. The oil rag begins to “oxidize” — to react chemically with the oxygen in the warm air around it — which in turn produces still more heat. The heat causes the oil to oxidize faster and produce still more heat. Since the heat is not drawn away by ventilation, it builds up around the rag.

Finally, the rag gets hot enough to burst into flames. All this can and does occur without any source of heat.

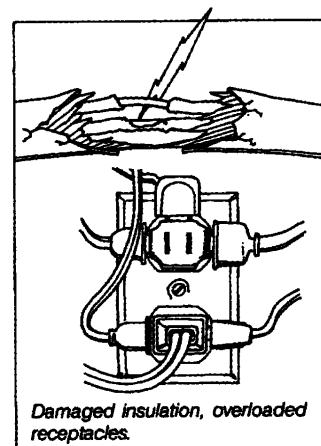


Faulty Electrical Equipment

When electrical equipment wears out, is misused or is poorly wired, electrical energy can turn to heat and a fire may be the result. Standard home or industrial electrical equipment has no place on the ocean. The salt air causes corrosion and a steel hull can cause erratic operation or short-circuiting. The result may be overheating or arcing in equipment or wiring and the ignition of flammable materials nearby.

Approved marine electrical equipment is specially made for shipboard use.

You can avoid this type of fire by making frequent inspections, replacing wires that are obviously defective and by using only fuses and circuit breakers of the proper size for the circuit.



Exposed Light Bulbs

An exposed light bulb can ignite combustible material by direct contact. Numerous vessel fires have started when a crewmember left a lamp lit in unoccupied quarters. As the ship rolled, curtains or other combustible material came in direct contact with the hot bulb and ignited.

Engine Rooms

Engine rooms are full of fire hazards. Water dripping from ruptured sea water lines can cause severe short-circuiting and arcing in electric motors, switchboards, and other exposed electrical equipment. Hot engine exhausts can also cause vessel fires.

Drip trays should be emptied frequently and oil accumulation in the bilges should be kept to a minimum. A safety fuel shut-off should be installed outside the engine compartment to allow the operator to stop the flow of fuel without entering a fire area.

Foam Insulation

Many vessels use rigid polyurethane or other organic foam insulation because of their excellent insulation properties. Such foams should be covered with a suitable flame barrier.

Should a fire occur in areas filled with foam, after the fire is extinguished, the foam must be completely removed to ensure that the fire is not smoldering in concealed spaces.

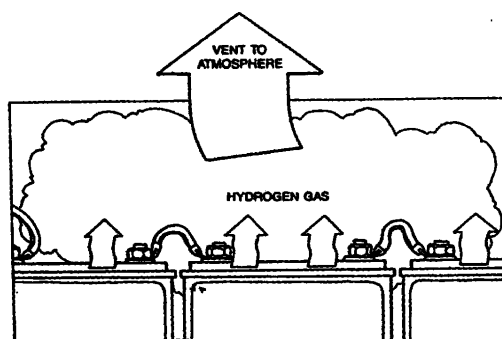
All foams can burn, and they give off toxic gases and black smoke.

Electric Motors

Faulty electric motors are prime causes of fire. Problems may result when a motor is overloaded, isn't properly maintained or is used beyond its safe working life. Motors require regular inspection, testing, lubrication, cleaning and ultimately replacement.

Charging Storage Batteries

When storage batteries are being charged, they emit hydrogen, a highly flammable gas. A mixture of air and hydrogen can be explosive. Hydrogen is lighter than air and will rise as it is produced. If ventilation is not provided at the highest point in the battery charging space, the hydrogen will collect. Then, any source of ignition can cause an explosion and fire.



Galley Operation

A ship's galley is a busy, potentially dangerous place. The intense activity, the many people, the long hours of operation and the basic hazards — open flames, fuel lines, rubbish, and grease or soot build up and general poor housekeeping — all add to the danger of a fire.

When liquid fuels are used for cooking, extreme care should be taken to avoid damage to fuel lines. You should be constantly alert to leaks in fuel lines and fittings. Everyone who uses the galley should know where the fuel line shut-off valves are and the valves must be easy to get at.

Good housekeeping and cleanliness is a must and it doesn't mean just cleaning the stovetop.

Smoking

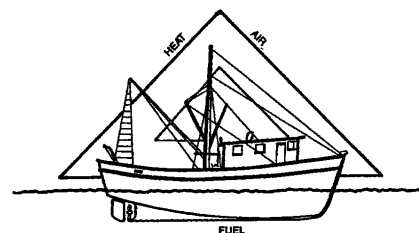
Careless smoking is a key fire hazard. Cigarettes and matches must be properly disposed of in noncombustible receptacles. Ashtrays should be emptied into metal containers with lids, not cardboard boxes used as trash containers. In hazardous areas, no smoking warnings should be posted and observed. Smoking in bed should be prohibited.



The Fire Triangle

A fire must have HEAT, FUEL and OXYGEN in order to burn. Remove any leg of this "triangle" and fire cannot occur.

The fuel for a fire can be in the form of flammable solids, liquids or gases. Liquid fuels burn more intensely than solids because they are more easily vaporized. The vapor from a liquid fuel is also heavier than air. It is extremely dangerous because it will seek low places, dissipate slowly and travel to distant sources of ignition.



A boat is full of fuel sources for fire.

Air contains the oxygen necessary for burning and ignition heat is present in many forms aboard vessels, including flames, spark, friction and spontaneous or internal combustion.

Removing the Fuel

Theoretically, you could put out a fire by physically dragging the fuel away from the source of heat, like someone pulling a log out of a campfire. While this may be rarely practical, it is often possible to move nearby sources of fuel so the fire cannot expand beyond what is already being consumed.

In fire fueled by liquids or gases, it may be possible to extinguish the fire by cutting off the fuel supply. When a fire is being fed by a leaky hydraulic or diesel line, for example, it can be put out by closing the proper valve. If a pump is supplying liquid fuel to a fire in the engine room, the pump can be shut down. Either way, the source of the fuel is removed and the fire is extinguished.

Removing the Oxygen

A fire can be put out by removing its oxygen, or by lowering the oxygen level in the air to less than 16 percent. In open areas, smothering a fire is difficult but not impossible. In smaller open areas, *i.e.*, fire in a galley trashcan, it may be snuffed out simply by placing a cover tightly over the can blocking the flow of air to the fire.

To put out a fire in an enclosed compartment, engine room or cargo hold, the space can be starved of oxygen by completely closing all air-tight hatches, doors, etc. The fire will consume all the available oxygen as long as no air can continue to enter.

Removing the Heat

The most common method of putting out fire is to remove the heat by attacking the fire base with water. An excellent heat absorber, water destroys the ability of a fire to sustain itself by cooling the fuel, by absorbing the fuel and by absorbing radiant heat from flames.

Stability Hazard

The use of large quantities of water to fight fires may jeopardize the stability of the vessel. Dewatering techniques must be commenced immediately when large quantities of water are used.

WARNING: The use of water on electrical fires is not recommended. On electrical fires, water creates a shock hazard. On oil fires, a solid stream will splash the oil, possibly spreading the fire. Water fog may be used on oil fires.

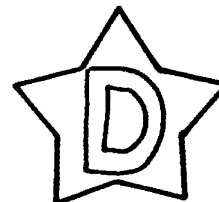
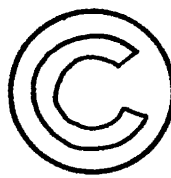
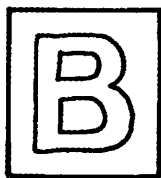
Spread of Fire

If a fire is attacked quickly and effectively, it can usually be contained and extinguished. If it is allowed to burn freely, however, it will generate great amounts of heat that can spread throughout the vessel and ignite new fires wherever fuel and oxygen are present.

Additionally, the heat flame, smoke and gases associated with fire pose many health hazards. Crewmen fighting a fire should use all available protective clothing and respiratory equipment and should stay low and retreat to fresh air before they are overcome.

Classification of Fire

To put out a fire successfully, you need to use the most suitable type of extinguishing agent — one that will do the job in the least amount of time, cause the least amount of damage and result in the least danger to crew members. The job of picking the proper agent has been made easier by the classification of fires into four types, or classes, lettered A through D. Within each class are all fires involving materials with similar burning properties and requiring similar extinguishing agents. However, most fuels are found in combinations and electrical fires always involve some solid fuel.

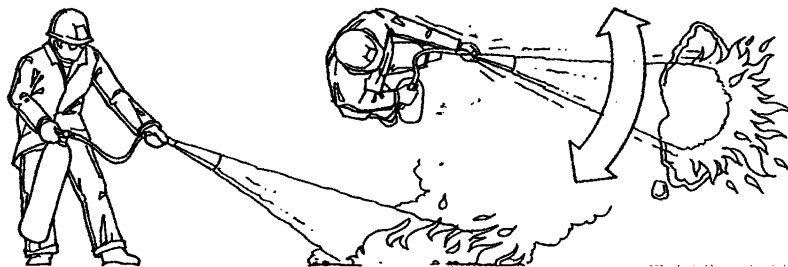


Class A Fires

Fires of common combustible solids such as wood, paper and plastics are best put out by WATER, a cooling agent. Foam and certain dry chemicals, which act mainly as smothering or chain-breaking agents, may also be used.

Class B Fires

For fires involving oil, grease, gas and other substances that give off large amounts of flammable vapors, a smothering agent is best for the job. Dry chemical, foam and carbon dioxide (CO₂) may be used. Water, although appropriate, in most cases



Aim at the base of the fire and sweep the flames away.

with inexperienced personnel will only make the fire worse. If the fire is being supplied with fuel by an open valve or a broken pipe, a valve on the supply side must be shut down to stop the fuel supply. This may put the fire out itself or at least make it easier to put out and allow the use of much less extinguishing agent.

Class C Fires

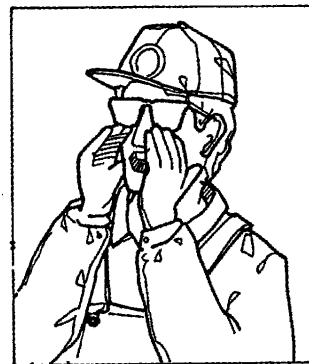
For fires involving energized electrical equipment, conductors or appliances, non-conducting extinguishing agents (CO₂, Halon, dry chemical) must be used, although dry chemical will ruin electronic equipment. An external generator and main engine shutdown switch should be available to shut off electrical sources. Always try to de-energize the circuit to remove the chances of shock and the source of ignition.

Class D Fires

These fires may involve combustible metals such as potassium, sodium and their alloys, and magnesium, zinc, titanium and powdered aluminum. Water should not be used on Class D fires. It may add to the intensity or cause the molten metal to splatter.

Hand-held Portable Fire Extinguishers

Portable extinguishers can be carried to the fire area for a fast attack, but they contain a limited supply of extinguishing agent. The agent is quickly used up and continuous application can exhaust the extinguisher in as little as 8 seconds. For this reason, it is important to back up the lead extinguisher with additional extinguishers or a hose line. If the first extinguisher fails or does not have enough agent to put out the fire completely, the additional extinguishers can be used to finish the job.



Sound the alarm.

Firefighting Procedures

The first step in fighting a fire is to sound the alarm and alert the captain and crew so the fire can be fought as a team. Vessels have been lost because someone tried to fight a fire by himself without sounding the alarm. By the time the rest of the crew knew what was happening the fire was out of control.

The crewmember that discovers a fire or the indications of fire must sound the alarm immediately. When you sound the alarm, be sure to give the exact location of the fire, including the compartment and deck level. This is important as it confirms the location for the vessel's fire party and gives them information regarding the type of fire to expect. The exact location may indicate the need to shut down certain fuel, electrical and ventilation systems and it indicates what doors and hatches must be closed to isolate the fire.

SIZE UP

Size-up is the evaluation of the fire situation. The fire team leader should determine:

- The class of fire (What combustible materials are burning?).
- The appropriate extinguishing agent.
- The appropriate method of attack.
- How to keep the fire from spreading.
- The required manpower and fire fighting assignments.

The first crew to arrive might extinguish a small fire. Larger fires require a coordinated attack and efficient use of manpower and equipment. During size-up, communication and a staging area should be set up.

Communications

Communications with the captain should be established by intercom or a messenger. Communications with fire fighting teams must be established and maintained.

Staging Area

The staging area should be established in a smoke-free area, as near as possible to the fire. An open-deck location, windward of the fire is ideal. If the fire is below deck deep within the vessel, the staging area should be a location below deck. A location near an intercom, if feasible, would be helpful in maintaining communications. However, the staging area should not be located where it will be endangered by fire. All supplies needed to support the firefighting effort should be brought to the staging area.

Attack the Fire

The attack should be started as soon as possible to gain immediate control of the fire and to prevent or minimize its spread. The attack will either be DIRECT or INDIRECT, depending on the fire situation, the equipment available and training level of the crewmen. Direct and indirect attacks differ widely in how they achieve extinguishments; both are effective when properly employed.

Direct Attack

In a direct attack, fire fighters advance to the immediate fire area and apply the extinguishing agent directly into the seat of the fire. An indirect attack should be considered if the heat and smoke make it impossible to locate or reach the seat of the fire.

Indirect Attack

An indirect attack is employed when it is impossible for fire fighters to reach the seat of the fire or they are not properly prepared as trained firefighters. Generally this is the case when the fire is in the lower portions of the vessel. The success of an indirect attack depends on the complete containment of the fire.

One technique involves making a small opening low into the fire space, inserting a fire hose nozzle and injecting a water spray. Heat converts the water to steam, which acts as a smothering agent.

Preventing Fire Spread

If a fire can be prevented from spreading beyond the space in which it originated, it can usually be controlled and extinguished without extensive damage. To do this, the fire must be virtually surrounded on all sides: fire fighters with the hose lines or portable extinguishers must be positioned to cover the flanks and the spaces above and below the fire. The possibility of the fire traveling through the venting system must also be considered. Many times in a fire at sea, the life rafts, life rings and PFD's are burned up before it occurs to anyone that the burning vessel might have to be abandoned.

Provisions should be made to safeguard and prepare life saving equipment during fire drills and actual fires.

Overhaul

Overhaul is begun after the main body of the fire is out. It is actually a combination of two procedures: EXAMINATION and CLEANUP. The purpose of the examination is to find and extinguish hidden fire and hot embers and to determine if the fire has spread to other parts of the vessel. At the same time, debris should be cleaned up and free water removed. Any unsafe conditions should be corrected.

When the Fire Is Out

Before a fire can be considered out, the crew must ensure that certain essential steps have been taken. These include:

- A thorough examination of the fire area to ensure that potential paths of fire spread have been examined.
- All smoke and combustion gases have been removed by ventilation.
- A reflash watch has been established. Crewmembers must be assigned to do nothing but check for re-ignition and to sound the alarm if it occurs.
- An examination has been made to see if the fire has damaged the vessel. High temperature can cause decks, bulkheads and other structural members to warp or become structurally unsound.
- Any necessary dewatering procedures have been started.
- A muster has been conducted to account for all personnel.

Tactical Considerations

- Alarm
- Organize and Stage
- Restrict and Confine
- Attack and Extinguish
- Protect Survival Gear
- Overhaul and Restore

Portable Extinguisher Operation

Pull The Pin

Aim Low at Base of Fire

Squeeze the Handle

Sweep from Side to Side

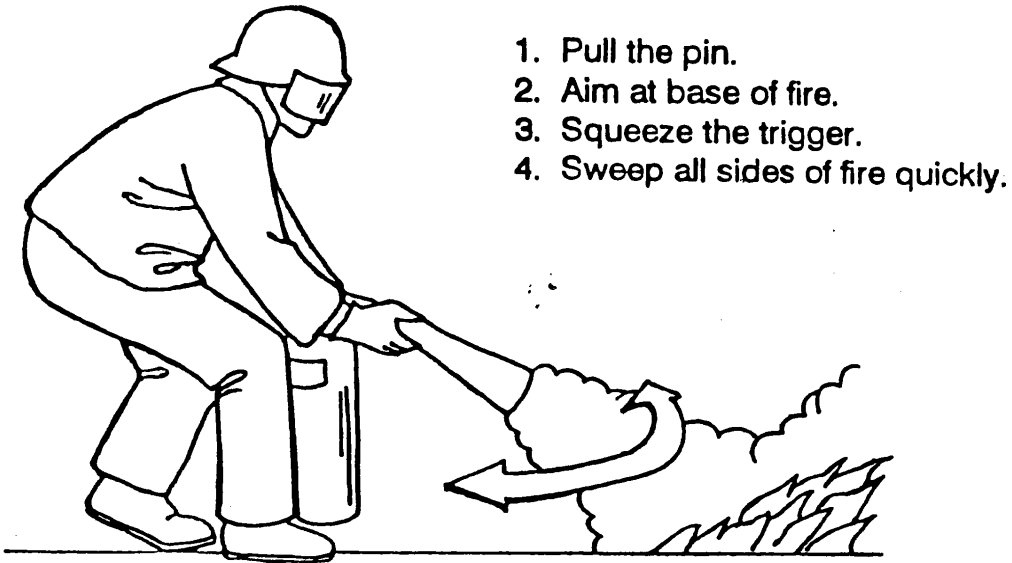
Fire Size-Up

- Where is the Fire?
- Are There People in the Space?
- What is Burning? What Class?
- What is the Best Agent?
- What is the Required Manpower?
- Can We Stop It from Spreading?

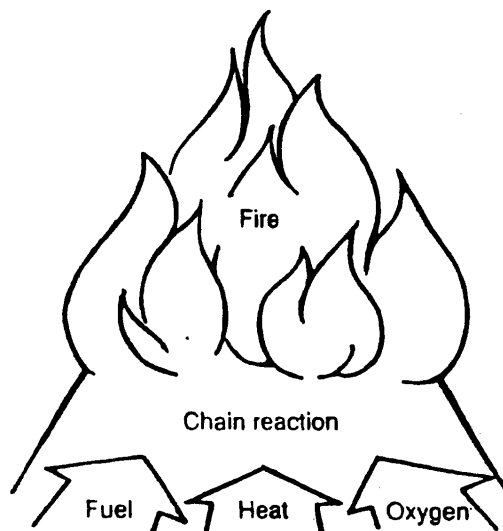
When the Fire Is Out

- Examine the Area Completely
- Ventilate Smoke and Gases
- Have Reflash Watch
- Damage Check to Vessel
- Dewatering Procedures
- Nose-Count of Personnel

Using Fire Extinguishers



Four Steps Leading to a Fire



Friday, October 19, 2007

[HOME](#) | [LOGIN](#) | [PLACE AN AD](#) | [CLASSIFIEDS](#) | [CONTACT US](#) | [GET TOOLBAR!](#)

SouthCoastTODAY.com

Your link to SouthCoast Massachusetts and beyond

LOCAL WEATHER:P/SUNNY 69°
Forecast / Radar**Earth's
PARTNER**
133 Wareham Road, Marion, MA
(508) 748-3933

Sign Up for E-mail Alerts

[NEWS](#) ▾ [SPORTS](#) ▾ [OPINION](#) ▾ [ENTERTAINMENT](#) ▾ [LIFESTYLE](#) ▾ [SPECIAL REPORTS](#) ▾ [SIGHTS & SOUNDS](#) ▾ [YOUR TOWN](#) ▾ [MARKETPLACE](#) ▾ [SERVICES](#) ▾

Crew aboard sinking vessel draw upon survival skills

By **BECKY W. EVANS**Standard-Times staff writer
October 03, 2007 6:00 AM

Text Size: A | A | A

[Print this Article](#) [Email this Article](#)

NEW BEDFORD — Fishing vessel safety training helped save the lives of five fishermen and a fishing observer who skillfully donned survival suits and leapt into a life raft when their scalloper began sinking off Nantucket, safety trainers said Tuesday.

The entire crew survived the incident without injuries. A day before the sinking, they had practiced an abandon-ship drill.

"They did exactly what they were supposed to do," said Ted Williams, a licensed drill instructor who teaches commercial fishermen safety skills during free workshops held in this city.

The 70-foot city fishing vessel Jacob Alan was about 40 miles southeast of Nantucket when it began taking on water around 6 p.m. Friday, according to the Coast Guard. Before abandoning ship, the crew made a triple mayday call and activated its Emergency Position-Indicating Radio Beacon, which sends a radio signal to a satellite to pinpoint the sender's Global Positioning System location.

Coast Guard First District Command Center in Boston instantaneously received the emergency signal as well as a second signal sent from the observer's personal EPIRB, according to the release. The command center then sent a radio broadcast alerting nearby vessels to assist the Jacob Alan's crew.

The New Bedford fishing vessel Sancor interrupted its groundfishing trip to rescue the crew from the lifeboat. The dragger, which is owned by Carlos Rafael, returned the survivors to New Bedford at about 6 a.m. Saturday. A week ago, the Sancor broke off another fishing trip to assist the fishing vessel Santa Barbara, Mr. Rafael said.

The Jacob Alan's crew included Capt. Antonio Vieira of New Bedford, Joao Simoes of New Bedford, Jose Bolanhino of East Providence, R.I., Justin Souza of New Bedford and Jose Medeiros of New Bedford. Meghan Miner of Cranston, R.I., was onboard the vessel to monitor its catch for the National Oceanic and Atmospheric Administration Fisheries Service. She is employed by AIS Inc., a New Bedford contractor that provides observer coverage from North Carolina to Maine.

Both Capt. Vieira and Mr. Medeiros had completed a city fishing safety training course in October 2005, said Ed Dennehy of New Directions, which helps organize the workshops.

The skills they learned during the course, which covers everything from firefighting to flare shooting to deploying life rafts, helped save their lives, said Mr. Williams, who works at IMP Fishing Gear and sold the Jacob Alan its life raft.

"The reason for this positive outcome was that both the fishermen and the observer were prepared," said Mike Tork, a fisheries biologist with NOAA Fisheries' Northeast Observer Program. Mr. Tork helps organize safety training for observers.

Ms. Miner, who joined the program in April, was required to take a three-week course that included two full days of fishing safety training, Mr. Tork said. The training included lessons in how to activate personal EPIRBs, which are attached to the observers' survival suits, he said.

"She knew how to do that," he said. "It worked exactly the way we hoped it would work. The signal was picked up in minutes."

The day before the Jacob Alan sank, the crew had practiced an abandon-ship drill, Mr. Williams said. Such drills are required under Coast Guard regulations, he said.

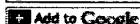
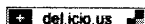
Coast Guard officials believe the Jacob Alan is sunk off Nantucket in 180 feet of water, said Lt. Phil Wolf, a senior investigating officer with Coast Guard Sector Southeastern New England.

Vessel owner Mark Freedman of Plymouth has hired a salvage company to recover the vessel, said Lt. Wolf, who is investigating the cause of the sinking.

Mr. Freedman declined to comment on the incident.

The Massachusetts Fishermen's Partnership will sponsor a fishing safety training workshop from 7:30 a.m. to 3 p.m. Friday, Oct. 19, at the UMass School for Marine Science and Technology.

Contact Becky W. Evans at revans@s-t.com

Share[HOME](#)**READER REACTION**

These discussions and our forums are not moderated. We rely on users to police themselves, and [flag inappropriate comments and behavior](#). You need not be registered to [report abuse](#). In accordance with our [Terms of Service](#), we reserve the right to remove any post at any time for any reason, and will restrict access of registered users who repeatedly violate our [terms](#). Click [here](#) if you wish to report inappropriate comments or behavior.



Be the first to post a comment using the form below

What happened:

I set off on the F/V Jacob Alan for an industry funded scallop trip in an open area, around 1:40pm on Friday the 21st of September, 2007. Sometime on Wednesday morning, when I woke for my shift, I was hearing reports on the radio that the Coast Guard had found a body floating in the water, with dark pants, face down. I asked the first mate, who was on the previous watch, as to what was going on, and he told me that from what he could tell, a boat had gone down the day before, and they were just finding the bodies now- none had worn survival suits. It sounded like there were 4 people involved, 3 dead, and one unconscious who was not expected to live much longer. The captain, also disturbed by these reports, ordered us the next day to do a safety drill. We went out on deck in fairly rough seas (5 ft waves), and put our survival suits on. Everyone on board did this drill except for the captain himself. The following night, Friday the 28th of September, around 4:45pm, after our 7th day of fishing and 8th day at sea, I was awoken by the Captain, Tony, saying that there was "a situation" on deck, and he needed me out there "now". At first, I thought that this was a joke, and I sorely underestimated the severity of the situation, I groggily headed toward the bathroom to get ready for my shift. I could hear the guys screaming my name so I came right out and into the chaos in the galley. I saw crewmembers bringing electronics down from the wheelhouse and into the galley where they were wrapping them in black garbage bags. I grabbed a few things from my bunk, including my deck notebook, my iPod and my glasses and went out on deck, as I was instructed. On the way to the deck area, you pass by the door to the wheelhouse and the area where the survival suits are kept in a door-less closet. I looked down into the engine room and saw water sloshing around on the engine room floor and coming up the steps. This is when I knew something was really wrong. Some of the crew were already struggling to put their survival suits on. I reminded them to grab layers and put them on under their survival suit in case this were to be a long ordeal. The captain was up in the wheelhouse sending mayday calls. He also deployed the life raft. I am uncertain as to who deployed the boat's EPIRB. Once we were instructed to abandon ship into the life raft, I set off my own PLB. Everyone jumped from the boat into the life raft without touching the water. The mood was very calm and collected. Everyone had a good sense of humor about the situation, and were making jokes as everything was happening. The captain was the last one into the raft. Some of the crew had brought along spare gallon jugs of water, and I suggested that everyone take some to treat shock, as we learned in the survival training class, but I was the only one who did. We remained floating in the raft, with the painter attached to the sinking vessel for what I think was probably about a half hour. The captain had an EPIRB with him on the life raft, whether this EPIRB was from the life raft or the boat, I am uncertain. He attached it to the plastic string from the life raft and had it floating in the water alongside the plastic boat. I had brought in my plastic bag with me, a VHF radio given to me by the captain for safekeeping. The radio worked occasionally and we could hear voices cutting in and out. By this time, the electricity on the boat had gone out, but since we were still attached to the boat by the painter, we could hear the Jacob Alan's radio (which must have been operating on a backup battery) from the life raft. We searched around in the bags within the life raft and found some flares. The captain shot off 2 flares, before we saw a plane overhead. We could hear the pilot of the plane over the radio in the Jacob

Alan saying that he had made a low pass, but did not see anything. At this point, the captain let the line free from the boat, as he was worried about how much longer the boat would stay afloat. We sent up another flare when we could hear a plane again. This time we heard radio confirmation of the sighting of our flare. What was approximately an hour to an hour and a half after we abandoned ship, the F/V Sancor came into view through the fog blaring its horn. We were hoisted onto the portside of the boat by crewmembers of the Sancor who also helped us to get the life raft aboard. We waited on the Sancor for several minutes, watching the Jacob Alan to see if it would sink. Although it was riding low in the water, very wobbly, and without electricity, we never saw the boat sink. The coast guard issued navigational warnings concerning the boat at least until we reached the dock sometime between 05:00 and 05:30 on Saturday morning the 29th. A member of the US coast guard boarded the Sancor and interviewed the crew, collected identification, and then released us all.

How my survival training helped me in an emergency situation:

Thanks to my previous survival training, I knew just what to do in this emergency situation. Although the events were happening quickly, and I was very nervous at first, I took a deep breath and just started following the steps that I had learned in my training class- it was like an out of body experience, like it wasn't happening to me. It's amazing the things that you remember when pressed. I remembered to wear layers, where the knife and flares were located once inside the raft, to remind everyone to drink water to treat shock and prevent overheating in our cramped steamy life raft, how to shoot a flare, and even to keep making jokes. Mostly, in this situation, the jokes revolved around me forgetting to bring my cell phone, and how mermaids will be my personal operators at least for a while. At least my calls would be screened. The captain also kept things light hearted and acted very quickly. If it were not for his cool-headedness, his drills, and HIS survival training, things may have gone much differently.

I also can't say enough how important it is to turn on your PLB once a serious situation has been assessed. I am a little bit upset that I did not set it off sooner. I kept thinking, oh, everything will be ok, we'll just see what happens next- until we were actually standing there, in our survival suits, ready to abandon ship. If I had not set off my PLB, and the signal had not been immediately picked up by the Coast Guard and the Airforce, I might not be here today!

We were fortunate enough to have conducted a survival drill on the boat the day before our boat actually went down, and this helped tremendously. Everyone practiced putting on their survival suits, the first mate had to even change sizes during this drill- an important thing to know, as he may not have had the time to do this in a real emergency situation. More captains should have drills- particularly every time they add or change crew members- you never know when this trip could be the one where you need to act on those drills!

This whole situation, if nothing else, made me very aware of how important it is to do the safety checklist before getting on the boat, and to check for other things as well. It is your safety out there, and you are responsible for looking out for it! Take everything to do with safety seriously. This boat met and exceeded all of the safety requirements (they had an 8 man raft for a 6 man crew), had recently had their liferaft re-packed. The captain had also gone through a similar safety course, and was able to conduct drills on his boat very efficiently. Had I gone on any other seemingly fine boat, and had neglected to check the liferaft, safety sticker, EPIRB, or anything else, and something had been wrong or out of date- things could have gone much less smoothly! Even if the boat looks fine- you never know. Be prepared, and fortunately, I WAS!

Communication for Observers

2004

It's not your words..... It's what your body says!



- ☞ Avoid typing your personality with your voice.
 - ☞ Lower your pitch to sound more authoritative and credible.
 - ☞ Speak at a slower rate to convey seriousness, authority and deliberation.
 - ☞ Speak at a faster rate to convey excitement enthusiasm and energy.
- ☞ Walk, stand and sit with good posture.
- ☞ Adopt a handshake that matches your personality and intention.
- ☞ Use eye contact to establish rapport.
(But, keep in mind cultural differences.)
- ☞ Pay attention to Matching Behavior.
 - ☞ Body position
 - ☞ Facial expressions
 - ☞ Voice inflection
- ☞ Pay attention to Matching Energy.
 - ☞ Parallel energy
 - ☞ Opposing energy



How Do You Express Yourself?

Passive

Assertive

Aggressive

Actions

Loose handshake
Poor eye contact
Head Down
Inactive listening
Fear of speaking up & asking questions
Quiet voice
Beats around the bush

Firm handshake
Maintain good eye contact
Active listening
Appropriate volume
Direct & concise

Crushing handshake
'Staring down'
Interrupting
Dominates conversations
Loud voice
Pointing

Language

"That's okay, I really don't want to argue."
"Um, something happened today and I'm not sure what to do."

"In order to collect good data, I need..."
"I want to let you know what is happening on deck..."

"You have to do it my way."
"The guys are deck are not doing what I tell them."

Consequences

Needs do not get met.
Others lose respect for you.
Allows others to overlook your needs and opinions.
You resent others.

Needs get met by working cooperatively with others.
Earn respect from others.
Fosters good working relationships.

Your needs get met but at the expense of others.
Others lose respect for you.
Others resent you.
Leads to less cooperation next time around.

Conflict Management Styles

Competition



Advantages

- ☞ Useful when quick action is required
- ☞ Protects against those who take advantage of non-competitive behavior



Disadvantages

- ☞ Stops exploration of new approaches
- ☞ Goals may be achieved at the expense of others
- ☞ Little commitment
- ☞ Temporary solution
- ☞ Win/Lose

Collaboration



Advantages

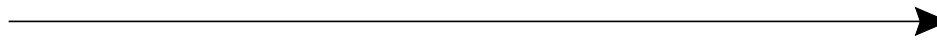
- ☞ Mutual exploration of new approaches
- ☞ Mutual resolution
- ☞ Gains commitment
- ☞ Permanent solution
- ☞ Win/Win



Disadvantages

- ☞ Can be time consuming
- ☞ Requires participation from others

Non-Supportive



Supportive

NEXT PAGE ➡

Conflict Management Styles (continued)

Avoidance

Compromise

Accomodation

Advantages

Disadvantages

Advantages

Disadvantages

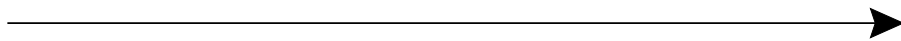
- ☞ Useful when risk outweighs gain
- ☞ Postpones tension
- ☞ Useful when others can solve the problem more effectively
- ☞ Useful to postpone action until more information surfaces

- ☞ Restricts input
- ☞ Temporary solution

- ☞ Useful to preserve harmony
- ☞ Avoids disruption
- ☞ Postpones conflict when necessary
- ☞ Useful when issues are not important to you

- ☞ Sacrifices your own point of view
- ☞ Limits creative resolution
- ☞ Win/Lose

Non-Supportive



Supportive

Some Useful Conflict Resolution Principles

Aids to using Reasoning vs Reactive Responses

- ☞ Take A **Breath** to give yourself Oxygen
 - Processes Adrenalin
- Connects the Right and Left Hemispheres of Your Brain
 - Accesses Your Long Term Memory
- ☞ Take Some **Time**
 - Let Reason Kick In
- ☞ **Think** about your Response
 - Do you mean it?
- Can you live with the consequences?

Conflict Styles

- ☞ **Competition:** Solving disputes through rivalry and contention.
- ☞ **Accommodation:** Solving disputes by obliging to the other person's needs.
- ☞ **Avoidance:** Refraining from engagement in a dispute.
- ☞ **Compromise:** A settlement of differences in which each side makes concessions.
- ☞ **Collaboration:** Cooperation and mutual exploration of the options available to solve a dispute.

Conflict Flow Chart



Communication Skills List

Write the skills you will work on most.

Shark sampling protocol

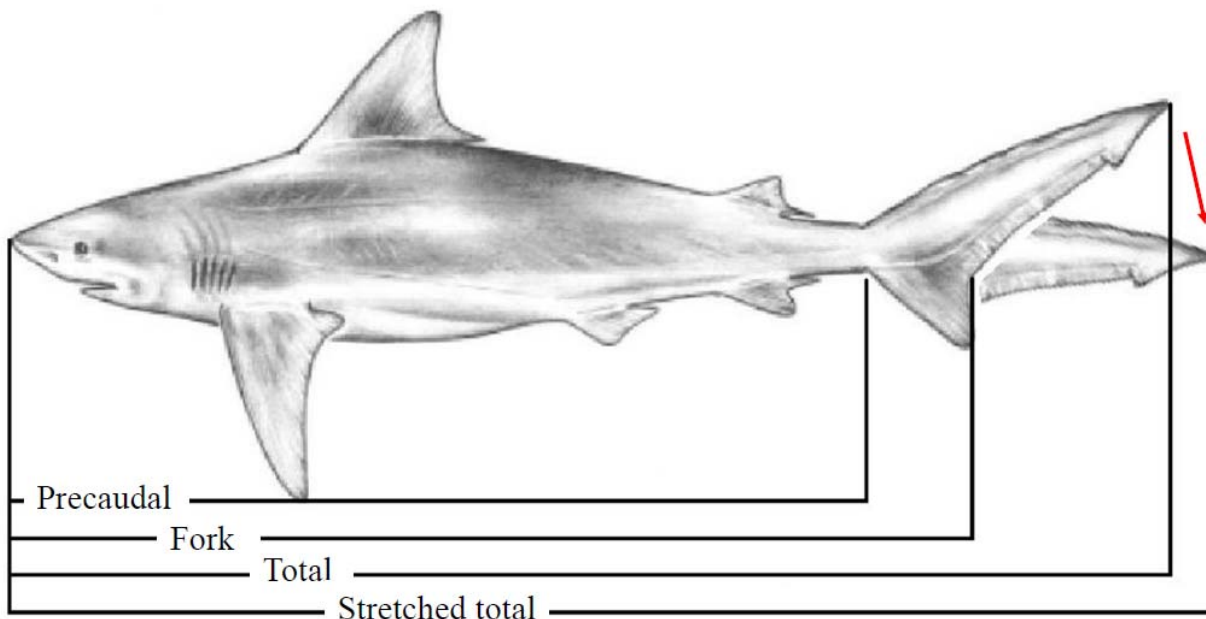
- The “**Samples Needed this Season**” sheet will identify the required species.
- Collect samples when the opportunity presents itself, but be wary allowing sampling to compromise your main objective (to observe all fishing operations).
- Ensure that straight line fork length measurements (see below) are taken from specimens sampled. Estimates of length cannot be used in age structure studies or for length-at-maturity. If you get an estimated length, your efforts will be a waste.
- **ALL SAMPLES** will have a waterproof label (filled in with pencil) within the ziplock:

OBS/TRIP#	_____
Haul #	_____
Species Code	_____
Specimen #	_____
Contents of bag	_____

Note – use 3 letter species code.

- It is extremely helpful if the sample is labeled on the outside of the bag as well.
- **ALL SAMPLES** will be recorded on the “**Samples Taken Form**”.

Measurement of sharks



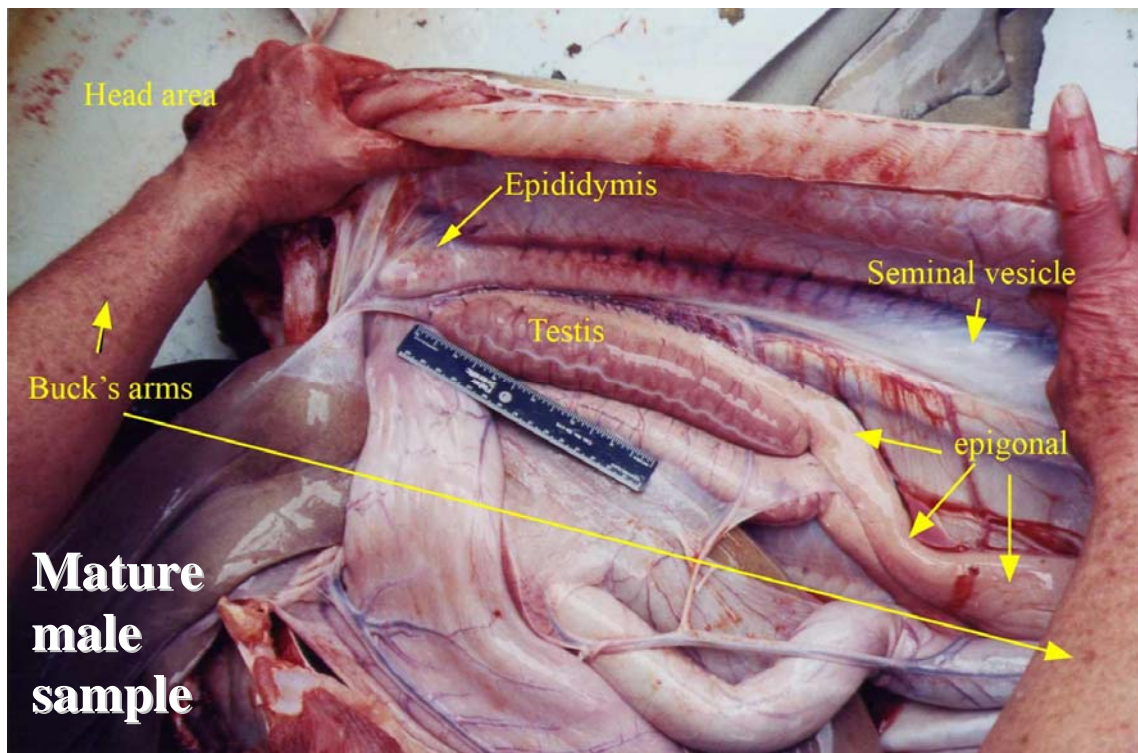
Straight measurements in centimeters

Vertebrae –

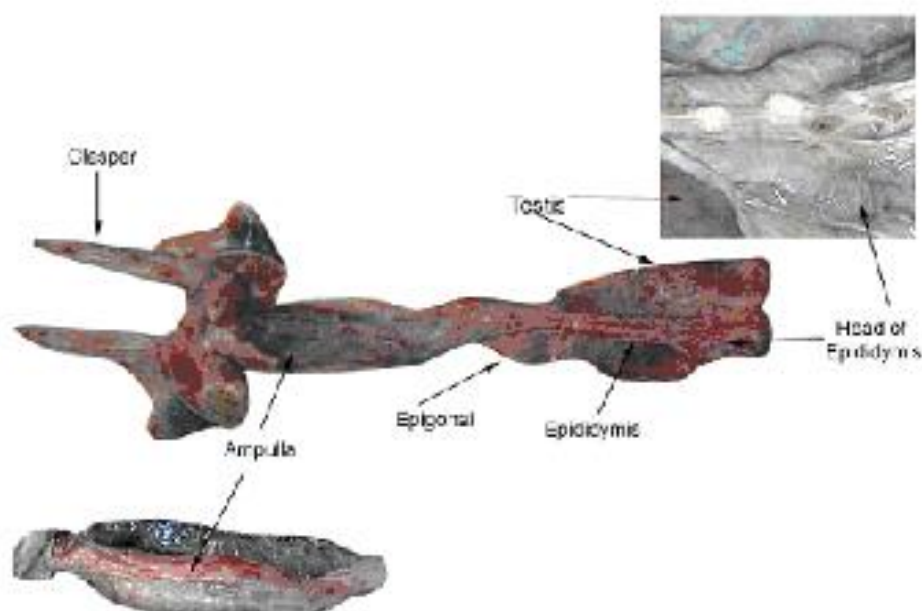
- Remove vertebrae from the areas just behind the head (branchial chamber). Samples should be at least 5 vertebrae long (usually around 10 cm).
 - **REMEMBER** to consider that this shark is a marketable product and care should be taken not to decrease the value.
 - If the shark is to be discarded, take the vertebrae from under the 1st dorsal fin.
- Place sample in Ziploc bag with internal label and store on ice or freeze until shipping.

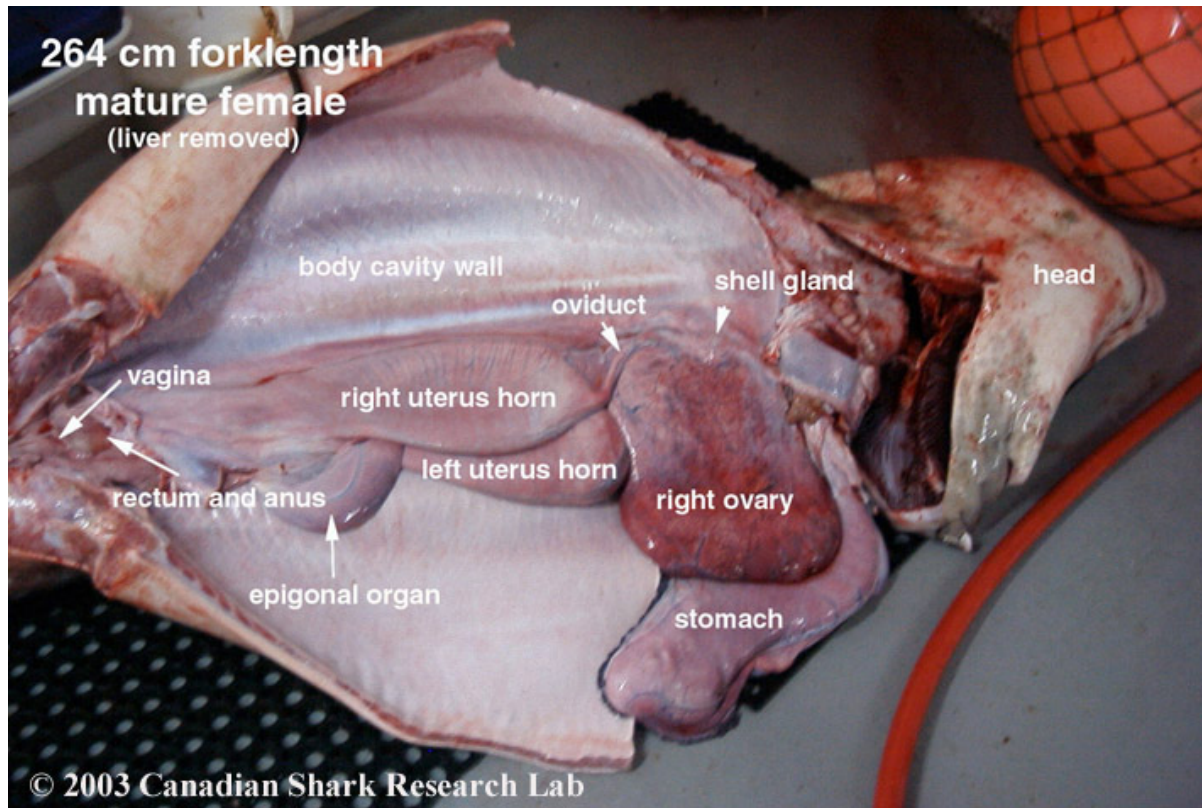
Reproduction –

- **A VERTEBRAL SAMPLE MUST ALSO BE TAKEN!**
- Remove reproductive tissue. If male, include the claspers attached to one pelvic fin.
- Place sample in Ziploc bag with internal label.
- Do not freeze samples unless it is the only means of preservation.

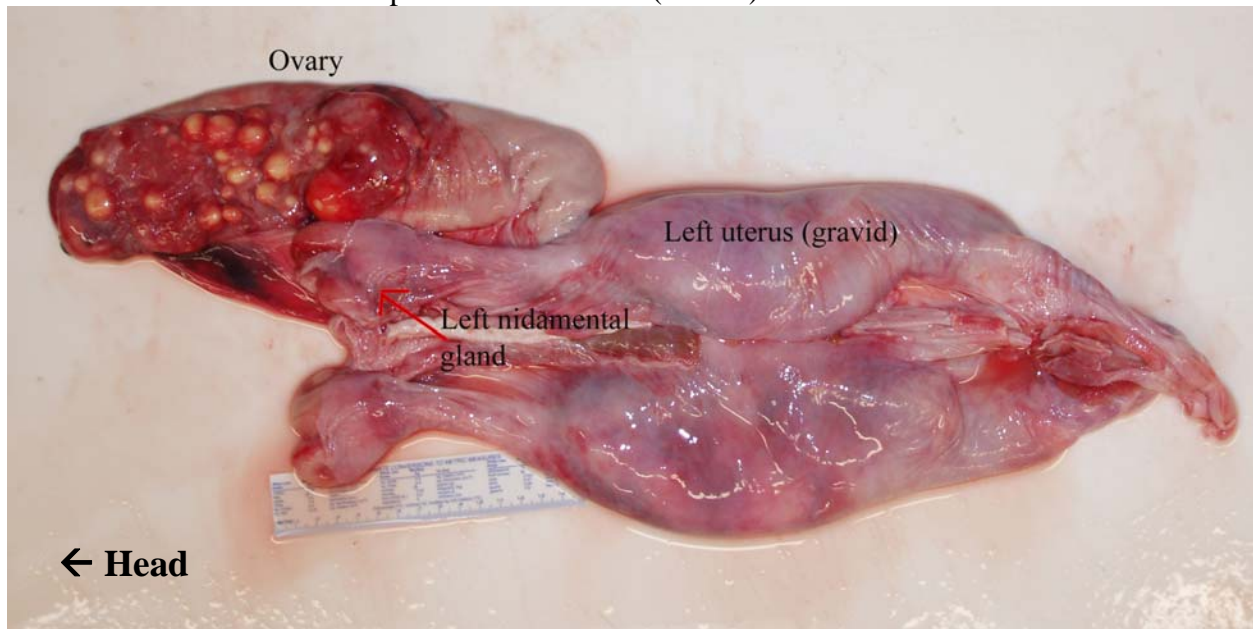
MALE REPRODUCTIVE SAMPLING

This is what the removed sample should look like (male).



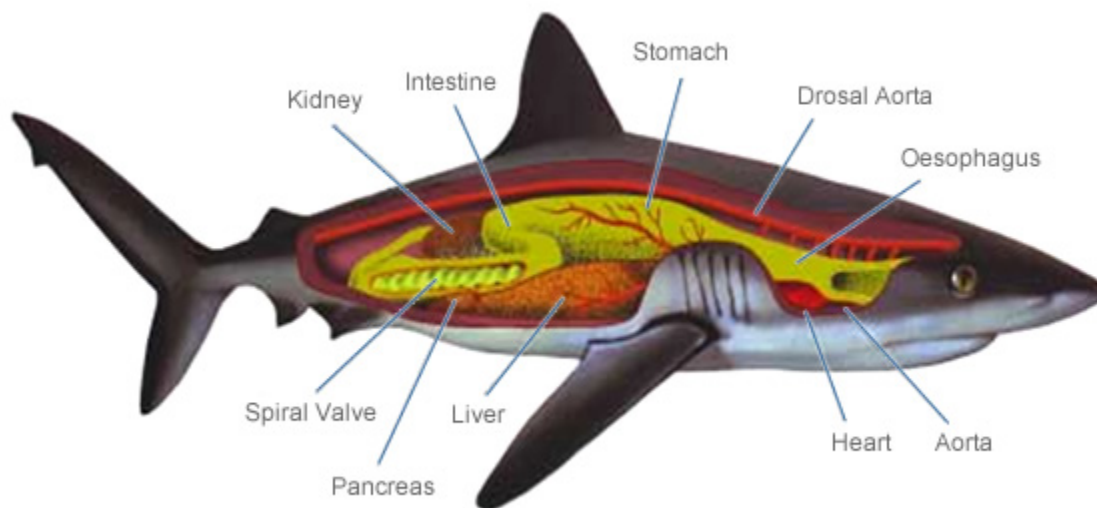
FEMALE REPRODUCTIVE SAMPLING

This is what the removed sample should look like (female).



Stomachs –

- Remove stomach from oesophagus (just after throat) through j-valve (just after stomach).
- If stomach is large, use ziptie or string to tie up each end of the sample.
- Place sample in Ziploc bag with internal label and store on ice or freeze until shipping.



Fin clips –

- Remove a small portion of the trailing edge of the first or second dorsal fin.
- Place fin clip in vial with EtOH.
- Place vial and waterproof label in dime bag. Each vial gets its own dime bag.

Fin sets –

- For any dead specimens that will be discarded, remove 1st dorsal, pectoral and lower caudal fins (2nd dorsal also for lemon and sand tiger sharks).
- Place sample in Ziploc bag with internal label and store on ice or freeze until shipping.

Jaws –

- Jaws should be collected from any dead prohibited species. Remove jaws from head, taking care with the sharp teeth.
- Place sample in Ziploc bag with internal label and store on ice or freeze until shipping.

Whole specimens –

- Dead specimens (<100cm FL) from prohibited species and other discards can be collected whole.
- Place sample in garbage/carcass bag with internal and external labels and store on ice or freeze until shipping.

Shipping Protocol

- **ALL SAMPLES** will have a waterproof label (filled in with pencil) within the ziplock or other bag.
- Where possible double/triple bag the samples. **DO NOT** put ziplocked samples in another samples' bag. Keep all samples in their own separate ziplock. You can place all ziplocked samples from one specimen in a larger ziplock together.
- Packaging is the responsibility of the observer and might require some creativity. **The major concern is to minimize smell and leakage throughout transport.** Pack a yeti cooler as follows:
 - an absorptive pad on the bottom.
 - the double bagged samples. Labeled samples in Ziplocs should be placed inside large Ziploc bags.
 - ziplocked ice. Do not fill cooler freely with ice or leave it in ice bags. **DO NOT USE DRY ICE!**
 - an absorptive pad over the top.
 - a filled out **“Samples Taken Form”**.
 - ziptie the cooler shut.
- **ALL SAMPLES** will be shipped **UPS Next Day Air**
 - UPS labels must be generated by the observer office and emailed to you or included in shipment before trip.
 - If you land on a weekend or holiday you may have to purchase a cooler and ice to keep samples cool until you can ship, or the program can ship you a cooler.
 - If you purchase a new cooler for shipping, please write “NOAA Fisheries Panama City”, “Shark samples on Ice”, and put arrows and “This Way Up” on the sides.
 - You can arrange for pickup service or take to the nearest UPS office.
 - Use cooler handle tags to hold shipping label, not sticker tag holders
 - **ALWAYS** record the tracking number prior to shipping.
 - **NEVER** ship data in coolers with biological samples.
 - **NEVER** ship a cooler on a Friday without consulting your coordinator first.

ATTN: Simon Gulak or Alyssa Mathers
NOAA Fisheries Panama City
3500 Delwood Beach Rd
Panama City, FL 32408
850-234-6541

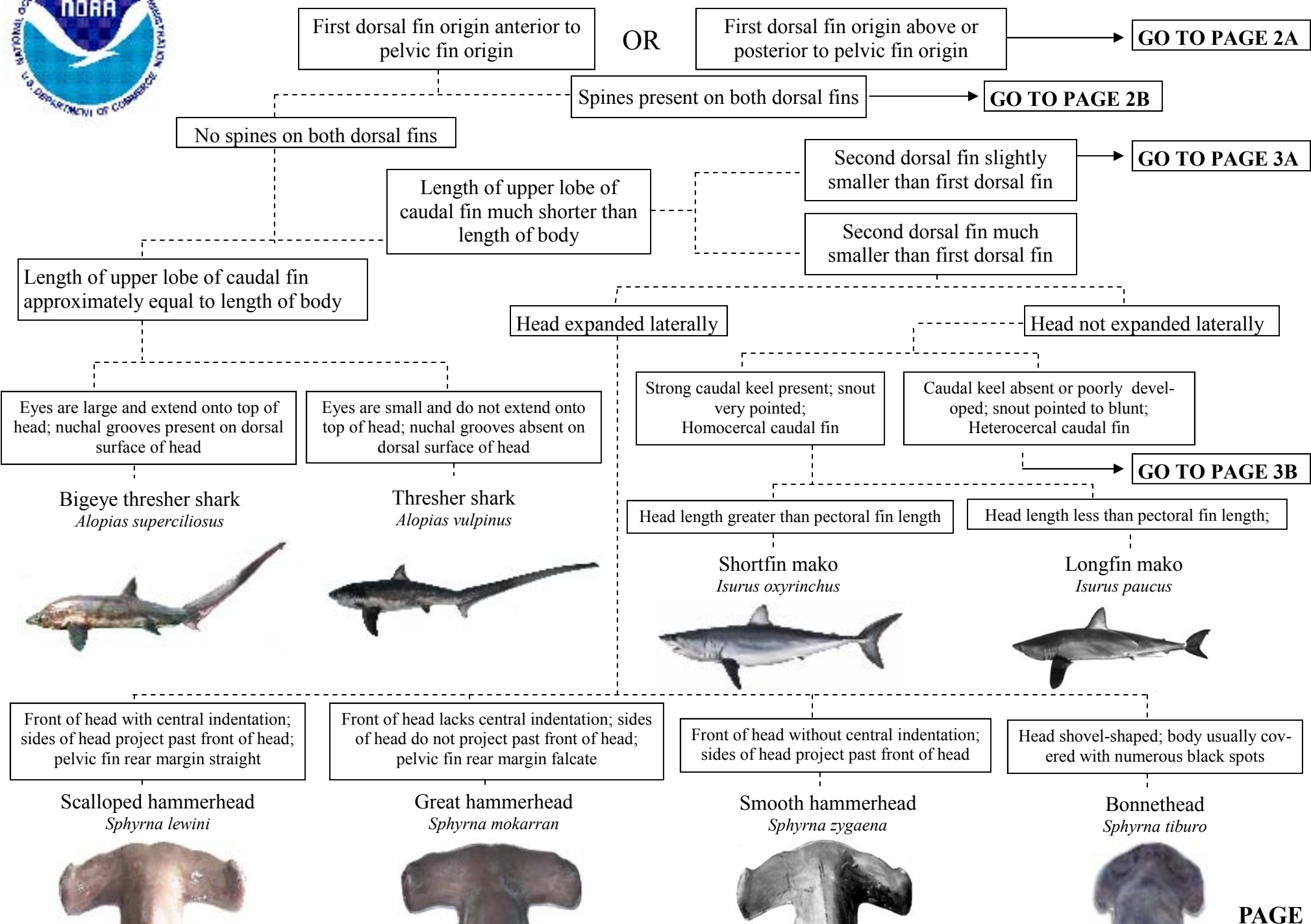
SEFOP Samples Needed this Season

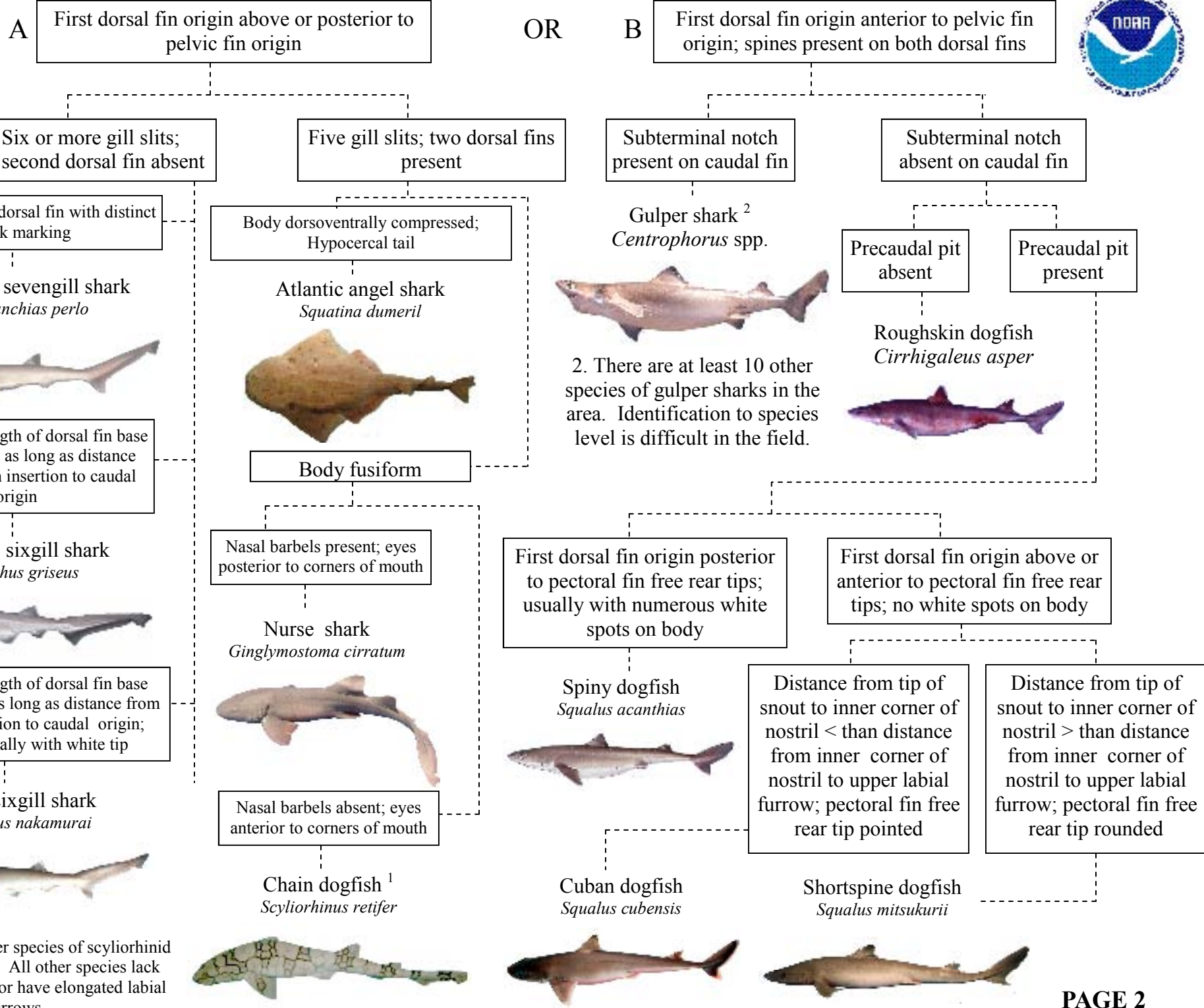
PROTECTED SPECIES ARE *ITALICIZED* & SHOULD ALWAYS BE TAGGED!
IF YOU ARE UNSURE OF ID, OR IF IT IS AN EASILY CONFUSED SPECIES, TAKE PICTURES AND A FIN CLIP
IF A REPRO SAMPLE IS TAKEN, A VERT SAMPLE MUST ALSO BE TAKEN
TAKE ALL FINS (DORSAL, PECS & LOWER CAUDAL) FROM DEAD DISCARDS

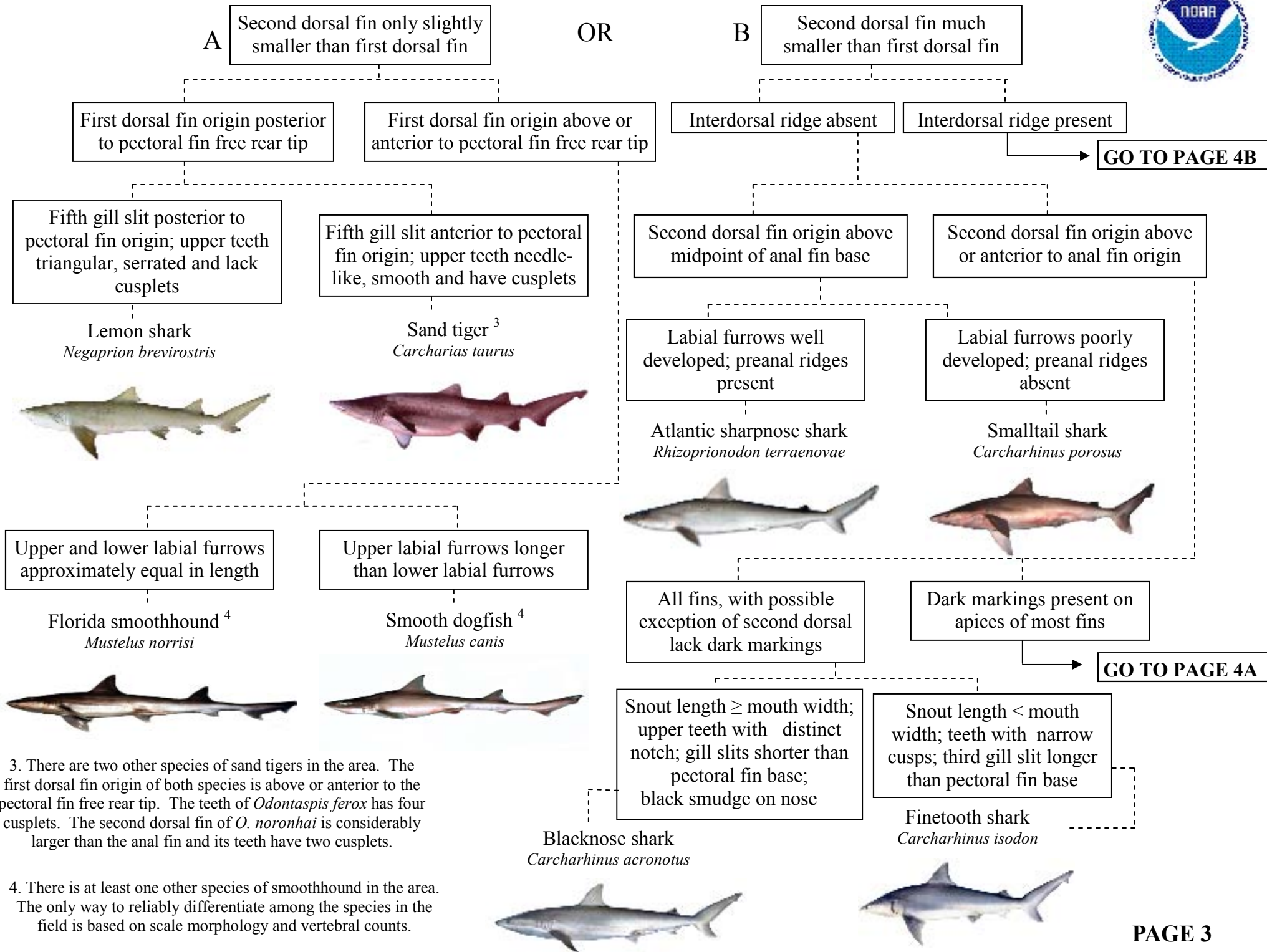
COMMON NAME:	SPP CODE:	SPP #:	SIZE BIN:	VERT	STOM	REPRO	FINCLIP	TAG	PIC
Sandbar	SSB	3513	ALL	X (5/trip)				X	
Blacktip	SBK	3495	ALL	X (5/trip)		X (Atlantic only)		X	
Finetooth	SFT	3481	ALL	X	X (Atlantic only)	X		X	
Silky	FAL	3493	ALL	X	X	X	X	X	X
Lemon	LEM	3517	ALL	X		X		X	
Blacknose (Atlantic only*)	SBN	3485	>80	X		X	X	X	
Bull	SBU	3497	ALL	X		X		X	
Spinner	SSP	3496	ALL				X	X	X
Tiger	TIG	3515	ALL		X		X	X	
Great Hammerhead	GHH	3524	>250	X			X	X	X
Scalloped Hammerhead	SPL	3523	>250	X			X	X	X
Smooth Hammerhead	SHH	3522	ALL	X	X	X	X	X	X
Common Thresher	PTH	3509	ALL	X	X	X	X	X	X
Shortfin Mako	SMA	3505	ALL	X	X	X	X	X	X
Cuban Dogfish	DCU	3531	ALL, whole	X	X	X	X		X
Shortspine Dogfish	DGM	3534	ALL, whole	X	X	X	X		X
Roughskin Dogfish	DGR	3535	ALL, whole	X	X	X	X		X
Gulper Shark	GLP	3533	ALL	X	X	X	X	X	X
Spotted Eagle Ray	SPE	3656	ALL				X		X
<i>Dusky</i>	DUS	3514	ALL	X	X	X	X	X	X
<i>Night</i>	SNI	3494	ALL	X	X	X	X	X	X
<i>Bluntnose Sixgill</i>	SIX	3528	ALL	X	X	X	X	X	X
<i>Bigeye Sixgill</i>	BSX	3529	ALL, whole	X	X	X	X	X	X
<i>Sevengill</i>	SEV	3587	ALL, whole	X	X	X	X	X	X
<i>Caribbean Reef</i>	SRF	3490	ALL	X	X	X	X	X	X
<i>Sand Tiger</i>	SST	3482	ALL	X	X	X	X	X	X
<i>White Shark</i>	GWS	3512	ALL	X	X	X	X	X	X
<i>Bigeye Thresher</i>	BTH	3510	ALL	X	X	X	X	X	X
<i>Bignose</i>	SBG	3491	ALL	X	X	X	X	X	X
<i>Longfin Mako</i>	LMA	3502	ALL	X	X	X	X	X	X
<i>Angel Shark</i>	ANG	3582	ALL	X	X	X	X	X	X
<i>Smalltooth Sawfish</i>	SSW	0084	ALL	X	X	X	X	X	X

* Note HMS defines the Florida Keys as the Gulf of Mexico.

Quick reference guide to the identification of sharks commonly caught on bottom longline gear

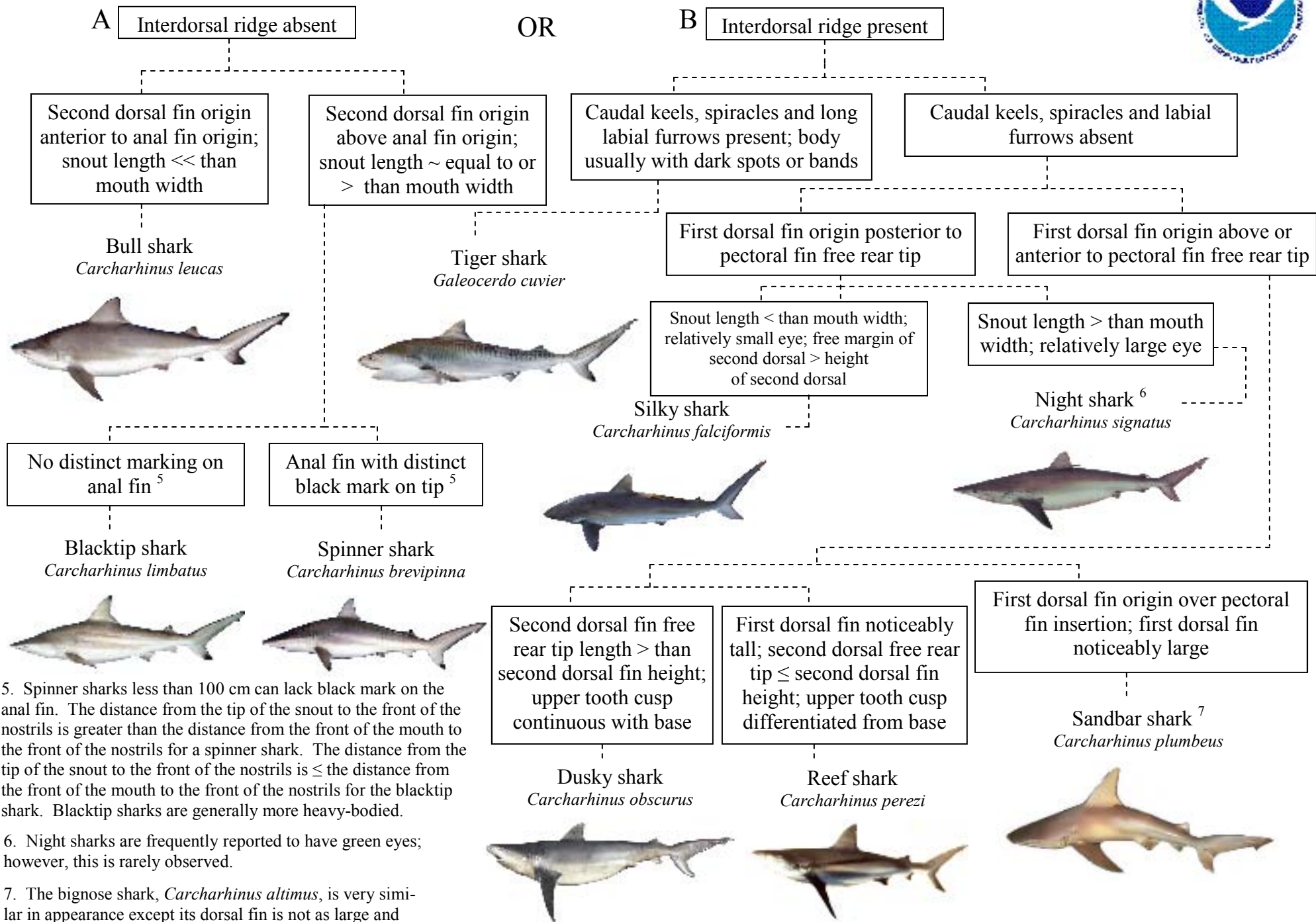






3. There are two other species of sand tigers in the area. The first dorsal fin origin of both species is above or anterior to the pectoral fin free rear tip. The teeth of *Odontaspis ferox* has four cusplets. The second dorsal fin of *O. noronhai* is considerably larger than the anal fin and its teeth have two cusplets.

4. There is at least one other species of smoothhound in the area. The only way to reliably differentiate among the species in the field is based on scale morphology and vertebral counts.



5. Spinner sharks less than 100 cm can lack black mark on the anal fin. The distance from the tip of the snout to the front of the nostrils is greater than the distance from the front of the mouth to the front of the nostrils for a spinner shark. The distance from the tip of the snout to the front of the nostrils is \leq the distance from the front of the mouth to the front of the nostrils for the blacktip shark. Blacktip sharks are generally more heavy-bodied.

6. Night sharks are frequently reported to have green eyes; however, this is rarely observed.

7. The bignose shark, *Carcharhinus altimus*, is very similar in appearance except its dorsal fin is not as large and second dorsal fin origin is anterior to the anal fin origin. Conversely, the second dorsal fin origin is above the anal fin origin on the sandbar shark.

W.B. Driggers III¹, L.F. Hale¹, I.E. Baremore¹, M.S. Passerotti¹, E.R. Hoffmayer²

1. National Marine Fisheries Service, Southeast Fisheries Science Center

2. University of Southern Mississippi, Gulf Coast Research Laboratory



NOAA Fisheries Service Observer Training

Teleost Sampling Request and Procedures

NOAA Fisheries Service
3500 Delwood Beach Road
Panama City, FL 32408
Phone: 850-234-6541

For question contact:
Galveston Observer Program
Hannah Lang x255
Email: Hannah.Lang@noaa.gov

Shark Bottom Longline Observer Program
Simon Gulak x236
Email: Simon.Gulak@noaa.gov

written by Linda Lombardi and Updated June 2012

Species List and Sampling Protocol

Common Name	Scientific Name	2011 IFQ group	GenSp	Sp. Abbr	Code
GAG GROUPER	<i>Mycteroperca microlepis</i>	GAG	MYCTEROMICROL	GAG	1423
RED GROUPER	<i>Epinephelus morio</i>	RED GROUPER	EPINEPHMORIO	RGR	1416
BLACK GROUPER	<i>Mycteroperca bonaci</i>	SWG	MYCTEROBONACI	BLG	1422
YELLOWFIN GROUPER	<i>Mycteroperca venenosa</i>	SWG	MYCTEROVENENO	YFG	1426
YELLOWMOUTH GROUPER	<i>Mycteroperca interstitialis</i>	SWG	MYCTEROINTERS	YMG	1425
SCAMP GROUPER	<i>Mycteroperca phenax</i>	SWG	MYCTEROPHENAX	CGR	1424
ROCK HIND	<i>Epinephelus adscensionis</i>	SWG	EPINEPHADSCEN	RHI	1412
RED HIND	<i>Epinephelus guttatus</i>	SWG	EPINEPHGUTTAT	REH	1423
SNOWY GROUPER	<i>Epinephelus niveatus</i>	DWG	EPINEPHNIVEAT	OGR	1414
WARSAW GROUPER	<i>Epinephelus nigritus</i>	DWG	EPINEPHNIGRIT	WGR	4740
YELLOWEDGE GROUPER	<i>Epinephelus flavolimbatus</i>	DWG	EPINEPHFLAVOL	YEG	1415
SPECKLED HIND	<i>Epinephelus drummondhayi</i>	DWG	EPINEPHDRUMMO	SHI	1411
MISTY GROUPER	<i>Epinephelus mystacinus</i>	DWG	EPINEPHMYSTAC	MSG	1420
GRAY SNAPPER	<i>Lutjanus griseus</i>		LUTJANUGRISEU	SNG	3762
LANE SNAPPER	<i>Lutjanus synagris</i>		LUTJANUSYNAGR	LUL	3761
MUTTON SNAPPER	<i>Lutjanus analis</i>		LUTJANUANALIS	MSN	3763
RED SNAPPER	<i>Lutjanus campechanus</i>	RED SNAPPER	LUTJANUCAMPEC	RSN	3764
VERMILION SNAPPER	<i>Rhomboplites aurorubens</i>		RHOMBOPAUORU	SNV	3765
YELLOWTAIL SNAPPER	<i>Ocyurus chrysurus</i>		OCYURUSCHRYSU	YTS	3767
TILEFISH (Golden)	<i>Lopholatilus chamaeleonticeps</i>	TILEFISH	LOPHOLACHAMAE	TIL	4470
BLUELINE TILEFISH	<i>Caulolatilus microps</i>	TILEFISH	CAULOLAMICROP	BLT	4474
BLACKLINE TILEFISH	<i>Caulolatilus cyanops</i>	TILEFISH	CAULOLACYANOP	BKT	4476
ANCHOR TILEFISH	<i>Caulolatilus intermedius</i>	TILEFISH	CAULOLAINTERM	ATL	4479
GREATER AMBERJACK	<i>Seriola dumerili</i>		SERIODUMERI	GAJ	1812
RED PORGY	<i>Pagrus pagrus</i>		PAGRUSPAGRUS	PRD	3300
GRAY TRIGGERFISH	<i>Balistes capriscus</i>		BALISTECAPRIS	TRG	0106
KING MACKEREL	<i>Scomberomorus cavalla</i>		SCOMBERCAVALL	KGM	1940
SPANISH MACKEREL	<i>Scomberomorus maculatus</i>		SCOMBERMACULA	SMK	3840

Species highlighted in yellow are the most common and relatively well studied species in the Gulf reef fish complex. For these species, gonads and otoliths are only requested during their reproductive period (January-June for gag and red grouper, and April-September for red snapper and vermillion snapper). For all other species otoliths and gonads are requested from year-round collections.

Sampling Protocol:

Target a minimum of 5 samples per species per day of the vessel's targeted reef fish species and a minimum of 5 samples per species per day of the vessel's non-targeted reef fish species. Both an otolith and a gonad are sampled from the targeted and non-targeted species.

Trip Length (day)	Targeted species per day	Non-Targeted species per day	Total # Samples
1	5	5	10
2	5	5	20
3	5	5	30
4	5	5	40
5	5	5	50

Scenario 1. Vessel targeting red grouper in February and also catches non-target species of speckled hind, red hind, red porgy and gag but on day 2, only 3 red grouper are caught.

Trip Length (day)	Targeted species per day	Non-Targeted species per day	Total # Samples
1	5 red grouper	1 speckled hind, 4 red porgy	10
2	3 red grouper	4 red porgy, 1 red hind, 1 speckled hind, 1 gag	20

Scenario 2. Vessel targeting red snapper in August and also catches non-target species of vermilion snapper, lane snapper, and gray triggerfish

Trip Length (day)	Targeted species per day	Non-Targeted species per day	Total # Samples
1	5 red snapper	5 vermilion snapper	10
2	5 red snapper	3 gray triggerfish, 2 vermilion snapper	20
3	5 red snapper	4 lane snapper, 1 gray triggerfish	30

Scenario 3. Vessel targeting red snapper in April locates a school of greater amberjack and switches the target species, non-target catch includes lane snapper and Spanish mackerel. On day 3, 7 greater amberjack are caught and no non-targeted species are caught.

Trip Length (day)	Targeted species per day	Non-Targeted species per day	Total # Samples
1	5 red snapper	5 lane snapper	10
2	5 greater amberjack	5 Spanish mackerel	20
3	5 greater amberjack		25

Scenario 4. Vessel targeting two species red snapper and vermilion snapper on the same set, non-target species include red porgy and mutton snapper.

Trip Length (day)	Targeted species per day	Non-Targeted species per day	Total # Samples
1	5 red snapper	5 red porgy	10
2	5 vermilion snapper	5 mutton snapper	20
3	3 red snapper 2 vermilion snapper		25

SPECIES LIST AND REQUESTED SAMPLES

Common Name	Species Abbr	GenSp	OTOLITHS	GONADS
GAG GROUPER	GAG	MYCTEROMICROL	JAN – JUNE	JAN - JUNE
RED GROUPER	RGR	EPINEPHMORIO	JAN - JUNE	JAN - JUNE
BLACK GROUPER	BLG	MYCTEROBONACI	All months	All months
YELLOWFIN GROUPER	YFG	MYCTEROVENENO	All months	All months
YELLOWMOUTH GROUPER	YMG	MYCTEROINTERS	All months	All months
SCAMP GROUPER	CGR	MYCTEROPHENAX	All months	All months
ROCK HIND	RHI	EPINEPHADSCEN	All months	All months
RED HIND	REH	EPINEPHGUTTAT	All months	All months
SNOWY GROUPER	OGR	EPINEPHNIVEAT	All months	All months
WARSAW GROUPER	WGR	EPINEPHNIGRIT	All months	All months
YELLOWEDGE GROUPER	YEG	EPINEPHFLAVOL	All months	All months
SPECKLED HIND	SHI	EPINEPHDRUMMO	All months	All months
MISTY GROUPER	MSG	EPINEPHMYSTAC	All months	All months
GRAY SNAPPER	SNG	LUTJANUGRISEU	All months	All months
LANE SNAPPER	LUL	LUTJANUSYNAGR	All months	All months
MUTTON SNAPPER	MSN	LUTJANUANALIS	All months	All months
RED SNAPPER	RSN	LUTJANUCAMPEC	APRIL – SEPT	APRIL – SEPT
VERMILION SNAPPER	SNV	RHOMBOPAUORU	APRIL – SEPT	APRIL – SEPT
YELLOWTAIL SNAPPER	YTS	OCYURUSCHRYSU	All months	All months
TILEFISH (Golden)	TIL	LOPHOLACHAMAE	All months	All months
BLUELINE TILEFISH	BLT	CAULOLAMICROP	All months	All months
BLACKLINE TILEFISH	BKT	CAULOLACYANOP	All months	All months
ANCHOR TILEFISH	ATL	CAULOLAINTERM	All months	All months
GREATER AMBERJACK	GAJ	SERIALADUMERI	All months	All months
RED PORGY	PRD	PAGRUSPAGRUS	All months	All months
GRAY TRIGGERFISH	TRG	BALISTECAPRIS	All months	All months
KING MACKEREL	KGM	SCOMBERCAVALL	All months	All months
SPANISH MACKEREL	SMK	SCOMBERMACULA	All months	All months

Species highlighted in yellow are the most common and relatively well studied species in the Gulf reef fish complex. For these species, gonads and otoliths are only requested during their reproductive period (January-June for gag and red grouper, and April-September for red snapper and vermillion snapper). For all other species otoliths and gonads are requested from year-round collections.

The species list contains 28 of the most common species managed in the Gulf of Mexico. If the vessel targets other species (not listed here), then please sample these species the same (10 fish per day: 5 target, 5 non-target). Additionally, there are species that are fairly rare (e.g. graysby grouper, *Epinephelus cruentatus*, cubera snapper, *Lutjanus cyanopterus*) and any samples collected from these species would be highly valuable, since very little is known about their life history.

List of Supplies for Otolith and Gonad Sampling for Observers

Otolith Collection

- ☐ 100 Pre-Stamped Otolith Envelopes
- ☐ 20 freezer proof quart zip-loc bags Use to group otolith envelopes per haul.
Label with OBS/TRIP ID and Haul #.

Gonad Collection

- ☐ 1 3.5-gallon Bucket
- ☐ 1 gonad corer
- ☐ 1 roll blue lab tape and/or label stickers
- ☐ 1 100-gram spring scale
- ☐ 100 Pre-Stamped Gonad Labels
- ☐ 20 Pre-Stamped Gonad bag Labels
- ☐ 100 vials pre-filled with 10% buffered formalin
- ☐ 20 freezer proof quart zip-loc bags Use to group gonad vials per haul.
Label with OBS/TRIP ID and Haul #.
- ☐ Safety Supplies – 5 pairs nitrile gloves, 1 pair safety glasses

BUCKET # _____

General Supplies:

- ☐ 2 Chisels different sizes - medium, large
- ☐ Small bait knife
- ☐ Sharpening Stone
- ☐ Temporary fish tags (zip ties and tags)
- ☐ Species List Index Card
- ☐ 2 – Black Sharpies
- ☐ 2 – Pencils
- ☐ Forceps
- ☐ Head Lamp
- ☐ UPS return label

Date tackle box provided to observer: _____

Observer Initial: _____

Personnel Initial: _____

Date tackle box returned: _____

TACKLE BOX # _____

Sagittal Otolith Removal Procedures

1. Cut the operculum to fold forward and open it wide towards the anterior end of the fish.
2. Cut away the gill arches at their insertion.
3. Use a chisel to scrape away tissue from the otolith capsule, the capsule will feel like a large knob or protrusion.
4. Open the capsule with a chisel, the large sagittal otoliths can be easily removed with forceps.
5. Rub off any attached membranes from the otolith, rinse with fresh water and pat dry.
6. Place otolith in the provided coin envelope.
7. *Gray triggerfish only – do not remove otolith, remove the 1st dorsal spine. Insert a knife at the base of the spine and cut out the whole spine, including the knuckle. Rinse, pat dry & store in otolith envelope.*
8. Please write the following information on the provided pre-stamped envelopes:

OBS/TRIP ID:

Haul #:

Species Abbreviation: (see attached list)

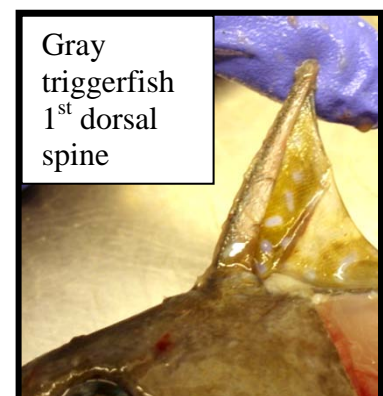
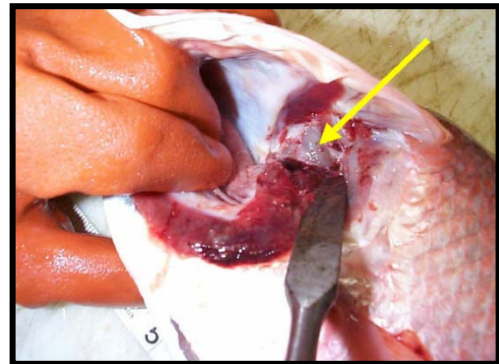
Specimen #:

Date:

Samples: Otolith and/or Gonad*

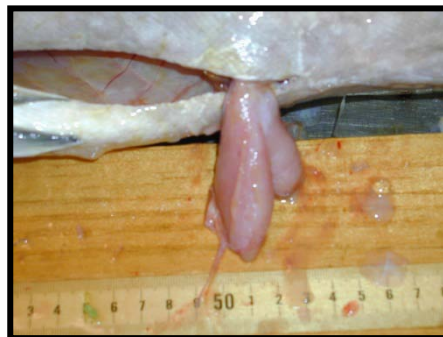
*circle sample(s) taken

9. Please store all otoliths in the provided quart zip-loc bags, labeled with:
OBS/TRIP ID
Haul #
10. Assigning specimen numbers.
 - a. SBLOP - Begin at 1 for each haul within a trip
 - b. GOM - Consecutively number all fish species from the same trip



Gonad Removal & Subsampling Procedures

1. Use a sharp knife and insert its tip just inside the anus.
2. Make a shallow cut through the ventral abdomen up to the base of the pelvic fin.
3. The gonad will be the only bi-lobed organ in the abdominal cavity dorsal to the anus, and will be attached to the upper-rear abdominal wall.
4. Grab the two lobes and carefully pull them away from the abdominal wall.
5. Cut the posterior end from the abdominal wall without cutting any of the lobes.
6. If the gonad is small enough to fit in the provided vial, then make a small incision in the gonad and submerge the entire gonad in the prefilled vial.
7. If the gonad is too large to fit in the provided vial, then weight the entire gonad.



- Next use a corer or knife, remove **two small** samples of gonad tissue about the size of a sugar cube from the **posterior** part of the gonad. Please place **both** samples along with gonad sample labels in the same sample bottle. Bottles are filled with 10% neutral buffered formalin.

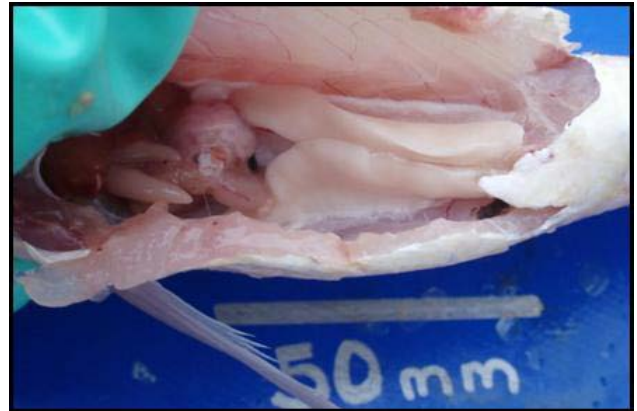


8. *Gray triggerfish only* - in males, please also remove the accessory gland and store the gland, along with the gonad, in the provided vial.
9. Using a **PENCIL**, write the following information on the provided pre-sampled gonad label and place the label in the vial:
OBS/TRIP ID: _____
Haul #: _____
Species Abbreviation: (see attached list)
Specimen #: _____
10. Place all gonads samples from a single haul in a zip-loc bag. Write the following information on the provided pre-stamped gonad bag label and place the label in the zip-loc (use **PENCIL**):
OBS/TRIP ID: _____ Haul #: _____

Identifying Sex

Both male and female gonads go through morphological changes depending on the stage of reproduction. Male gonads are thin, normally white to pinkish in color and taper to a point whereas, female gonads are oval in shape, appear pink to red in color, and during the peak of spawning small, fully developed oocytes can be seen with the naked eye.

Male



Female



Unknown

For those gonads that you have sampled but can not distinguish as a male or female.

PC FISHERIES OBSERVER SPECIES CODES (Alphabetized by Common Name)			
Common Name	Scientific Name	Code	#
AMBERJACK GREATER	<i>Seriola dumerili</i>	GAJ	1812
AMBERJACK LESSER	<i>Seriola fasciata</i>	LAJ	1815
AMBERJACKS	<i>Seriola sp.</i>	AMJ	0030
ANGELFISH BLUE	<i>Holocanthus bermudensis</i>	BAF	0579
ANGELFISH FAMILY	<i>Pomacanthidae</i>	ANF	0578
ANGLERFISH MONKFISH	<i>Lophius sp.</i>	AGL	0121
BALLOONFISH	<i>Diodon holocanthus</i>	BAL	0031
BARRACUDA FAMILY	<i>Sphyraenidae</i>	BAR	0180
BARRACUDA GREAT	<i>Sphyraena barracuda</i>	GBA	0181
BARRELFISH	<i>Hyperoglyphe perciformis</i>	BRF	0193
BATFISH FAMILY	<i>Ogcocephalidae</i>	BAT	0032
BATFISH POLKA-DOT	<i>Ogcocephalus radiatus</i>	BPD	0033
BEARDFISH	<i>Polymixia lowei</i>	BDF	0194
BIGEYE	<i>Priacanthus arenatus</i>	BGE	0140
BIGEYE FAMILY	<i>Priacanthidae</i>	BEF	0141
BIGEYE SHORT	<i>Pristigenys alta</i>	BGS	0145
BILLFISH FAMILY	<i>Istiophoridae</i>	BIL	2180
BIRD COMMON LOON	<i>Gavia immer</i>	LOO	6301
BIRD DOVEKIE	<i>Alle alle</i>	DOV	6300
BIRD GANNET NORTHERN	<i>Sula bassanus</i>	GAN	6171
BIRD GULL	<i>Larinae sp.</i>	GUX	6200
BIRD GULL BLACK BACKED	<i>Larus minutus</i>	GBB	6205
BIRD GULL HERRING	<i>Larus argentatus</i>	GHE	6206
BIRD GULL LAUGHING	<i>Larus autricilla</i>	GLA	6208
BIRD PELICAN BROWN	<i>Pelecanus occidentalis</i>	PEL	6201
BIRD SHEARWATER	<i>Puffinus sp.</i>	SWX	6400
BIRD SHEARWATER GREATER	<i>Puffinus gravis</i>	SWG	6402
BIRD STORM PETREL WILSONS	<i>Oceanites oceanicus</i>	SPW	6434
BIRDS	<i>Bird</i>	BRD	6100
BLUEFISH	<i>Pomatomus saltatrix</i>	BLU	0230
BONITO	<i>Sarda sarda</i>	BON	0330
BRYOZOA	<i>Bryozoa</i>	BRY	7200
BULLEYE	<i>Cookeolus japonicus</i>	BLE	0146
BUMPER ATLANTIC	<i>Chloroscombrus chrysurus</i>	ABU	0040
BURRFISH STRIPED	<i>Chilomycterus schoepfi</i>	BRS	2762
BUTTERFISH	<i>Peprilus triacanthus</i>	BUT	0037
BUTTERFISH GULF	<i>Peprilus burti</i>	BGF	0038
CATFISH GAFFTOPSAIL	<i>Bagre marinus</i>	CGF	0035
CATFISH HARDHEAD	<i>Arius felis</i>	CHH	0036
CIGARFISH BIGEYE	<i>Cubiceps sp.</i>	CUB	0530
COBIA	<i>Rachycentron canadum</i>	CBA	0570
CORAL	<i>Anthozoa</i>	COR	8160
CORNETFISH BLUESPOTTED	<i>Fistularia tabacaria</i>	FIS	0010
CORNETFISH RED	<i>Fistularia petimba</i>	FIP	0011
COWFISH SCRAWLED	<i>Lactophrys quadricornis</i>	COW	0028

CRAB	<i>Decapoda</i>	CRA	7190
CRAB ATLANTIC ROCK	<i>Cancer irroratus</i>	CAI	7120
CRAB BLUE	<i>Callinectes sapidus</i>	CBL	0114
CRAB CANCER	<i>Cancer spp.</i>	CAC	7140
CRAB FLAME BOX	<i>Calappa flammea</i>	CAF	7130
CRAB HERMIT	<i>Paguroidea</i>	CAH	7185
CRAB HORSESHOE	<i>Limulus polyphemus</i>	HSC	7240
CRAB JONAH	<i>Cancer borealis</i>	CAB	7110
CRAB KING	<i>Paralithodes sp.</i>	CAK	7090
CRAB PORTUNIDAE	<i>Portunidae</i>	CPO	7020
CRAB SPIDER	<i>Majidae</i>	MAJ	7187
CRIMSON ROVER	<i>Erythrocles monodi</i>	CRV	2525
CROAKER ATLANTIC	<i>Micropogonias undulatus</i>	CRO	0041
CUBBYU	<i>Equetus umbrosus</i>	CYU	0042
CUTLASSFISH ATLANTIC	<i>Trichiurus lepturus</i>	CAT	0009
DAMSELFISHES	<i>Pomacentridae</i>	DMX	0196
DEALFISH FAMILY	<i>Trachipteridae</i>	DEA	0985
DOLPHIN	<i>Stenella sp.</i>	MDO	9038
DOLPHIN ATLANTIC SPOTTED	<i>Stenella frontalis</i>	MAD	9040
DOLPHIN BOTTLENOSE	<i>Tursiops truncatus</i>	MBD	9036
DOLPHIN COMMON	<i>Delphinus delphis</i>	MCO	9042
DOLPHIN FISH (MAHI MAHI)	<i>Coryphaena hippurus</i>	DOL	1050
DOLPHIN PANTROPICAL SPOT	<i>Stenella attenuata</i>	MPD	9039
DOLPHIN RISSOS	<i>Gampus griseus</i>	MRD	9037
DOLPHIN SPINNER SHORTBEAK	<i>Stenella clymene</i>	MCL	9041
DOLPHIN STRIPED	<i>Stenella coeruleoalba</i>	MSD	9043
DRUM BANDED	<i>Larimus fasciatus</i>	DBA	0043
DRUM BLACK	<i>Pogonias cromis</i>	DBL	0044
DRUM RED	<i>Sciaenops ocellatus</i>	RDD	1082
DRUM SAND	<i>Umbrina coroides</i>	SDR	1083
DRUM STAR	<i>Stellifer lanceolatus</i>	DST	0045
EEL BEARDED BROTLA	<i>Brotula barbata</i>	BBR	1144
EEL CONGER FAMILY	<i>Congridae</i>	CNG	1142
EEL KING SNAKE	<i>Ophichthus rex</i>	KSE	1137
EEL MORAY BLACKTAIL	<i>Gymnothorax kolpos</i>	EBT	1151
EEL MORAY FAMILY	<i>Muraenidae</i>	MEL	1143
EEL MORAY GREEN	<i>Gymnothorax funebris</i>	EGM	1147
EEL MORAY OCELLATED	<i>Gymnothorax saxicola</i>	EOM	1145
EEL MORAY PURPLEMOUTH	<i>Gymnothorax vicinus</i>	PME	1150
EEL MORAY RETICULATE	<i>Muraena retifera</i>	RMO	1148
EEL MORAY SPOTTED	<i>Gymnothorax moring</i>	SMO	1149
EEL PALE-SPOTTED	<i>Ophichthus ocellatus</i>	PSE	1146
EELS	<i>Anguilliformes</i>	EEL	1140
ESCOLAR (SMOOTH SKIN)	<i>Lepidocybium flavobrunnrum</i>	GEM	2501
ESCOLAR LONGFIN	<i>Scombrilabrax heterolepis</i>	ESL	2506
FILEFISH UNICORN	<i>Aluterus monoceros</i>	FUN	0109
FILEFISH WHITESPOTTED	<i>Catherines macrocerus</i>	FIW	0046
FILEFISHES	<i>Aluterus sp.</i>	FLE	0047

FLOUNDER	<i>Paralichthys sp.</i>	FLO	0048
FLOUNDER GULF	<i>Paralichthys albigutta</i>	FLG	0049
FLOUNDER OCELLATED	<i>Anclyopsetta quadrocellata</i>	FLC	1250
FLOUNDER SOUTHERN	<i>Paralichthys lethostigma</i>	FLS	0050
FLOUNDER SUMMER	<i>Paralichthys dentatus</i>	FLD	1210
FROGFISH FAMILY	<i>Antennariidae</i>	FRO	8787
GAR FAMILY	<i>Lepisosteidae</i>	GAR	1330
GROUPE BLACK	<i>Mycteroperca bonaci</i>	BLG	1422
GROUPE FAMILY	<i>Serranidae</i>	GRP	1410
GROUPE GAG	<i>Mycteroperca microlepis</i>	GAG	1423
GROUPE GOLIATH	<i>Epinephelus itajara</i>	GOL	1421
GROUPE GRAYSBY	<i>Epinephelus cruentatus</i>	GSG	1428
GROUPE MARBLED	<i>Epinephelus inermis</i>	MBG	1417
GROUPE MISTY	<i>Epinephelus mystacinus</i>	MSG	1420
GROUPE NASSAU	<i>Epinephelus striatus</i>	NAG	1430
GROUPE RED	<i>Epinephelus morio</i>	RGR	1416
GROUPE SCAMP	<i>Mycteroperca phenax</i>	CGR	1424
GROUPE SNOWY	<i>Epinephelus niveatus</i>	OGR	1414
GROUPE WARSAW	<i>Epinephelus nigritus</i>	WGR	4740
GROUPE YELLOWEDGE	<i>Epinephelus flavolimbatus</i>	YEG	1415
GROUPE YELLOWFIN	<i>Mycteroperca venenosa</i>	YFG	1426
GROUPE YELLOWMOUTH	<i>Mycteroperca interstitialis</i>	YMG	1425
GRUNT BARRED	<i>Conodon nobilis</i>	BGU	1427
GRUNT BLUESTRIPED	<i>Haemulon sciurus</i>	SGU	0051
GRUNT CAESAR	<i>Haemulon carbonarium</i>	CGU	1429
GRUNT MARGATE	<i>Haemulon album</i>	MGT	1442
GRUNT WHITE	<i>Haemulon plumieri</i>	WGT	1441
GUITARFISH ATLANTIC	<i>Rhinobatos lentiginosus</i>	GUI	0052
HAKE GULF	<i>Urophycis cirrata</i>	HAG	1550
HAKE SILVER	<i>Merluccius bilinearis</i>	HSL	5090
HAKE SOUTHERN	<i>Urophycis floridana</i>	HAK	3901
HAKES MERLUCCIID FAMILY	<i>Merluccius spp.</i>	HKM	5070
HAKES PHYCID FAMILY	<i>Phycidae</i>	HKP	1522
HARVESTFISH	<i>Peprilus alepidotus</i>	HAR	0053
HERRING ATLANTIC THREAD	<i>Opisthonema oglinum</i>	HAT	0054
HERRING FAMILY	<i>Clupeidae</i>	HER	0055
HIND RED	<i>Epinephelus guttatus</i>	REH	1413
HIND ROCK	<i>Epinephelus adscensionis</i>	RHI	1412
HIND SPECKLED	<i>Epinephelus drummondhayi</i>	SHI	1411
HOGCHOKER	<i>Trinectes maculatus</i>	HOG	1760
HOGFISH	<i>Lachnolaimus maximus</i>	HOF	1790
HOUNDFISH	<i>Tylosurus crocodilus</i>	HOU	0056
JACK ALMACO	<i>Seriola rivoliana</i>	AJC	1810
JACK BLUERUNNER	<i>Caranx crysos</i>	JBR	0270
JACK CREVALLE	<i>Caranx hippos</i>	JCR	0870
JACK FAMILY	<i>Carangidae</i>	JKF	0057
JACKS	<i>Caranx sp.</i>	JAK	0034

JELLYFISH	<i>Scyphozoa</i>	JLY	8145
KINGFISH	<i>Menticirrhus sp.</i>	KIG	1811
KINGFISH GULF	<i>Menticirrhus littoralis</i>	KGU	0058
KINGFISH NORTHERN	<i>Menticirrhus saxatilis</i>	KNO	0059
KINGFISH SOUTHERN	<i>Menticirrhus americanus</i>	KSO	0060
LADYFISH	<i>Elops saurus</i>	LAD	0111
LANCETFISH	<i>Alepisaurus sp.</i>	LAX	2035
LEATHERJACKET FAMILY	<i>Balistidae</i>	LEA	0061
LIONFISHES	<i>Pterois sp.</i>	LNF	2080
LITTLE TUNNY	<i>Euthynnus alletteratus</i>	LTA	4653
LIZARDFISH FAMILY	<i>Synodontidae</i>	LIZ	0029
LIZARDFISH INSHORE	<i>Synodus foetens</i>	LZD	0062
LIZARDFISH SANDDIVER	<i>Synodus intermedius</i>	LSD	0039
LOBSTERS	<i>Nephropidae</i>	LOB	0113
LONGTAIL BASS	<i>Hemanthias leptus</i>	BSL	3374
LOOKDOWN	<i>Selene vomer</i>	LKD	0063
MACKEREL ATLANTIC	<i>Scomber scombrus</i>	AMK	0064
MACKEREL BULLET	<i>Auxis rochei</i>	BMK	0065
MACKEREL CERO	<i>Scomberomorus regalis</i>	MCE	0066
MACKEREL CHUB	<i>Scomber japonicus</i>	CHM	2150
MACKEREL FRIGATE	<i>Auxis thaza</i>	FRM	1900
MACKEREL KING	<i>Scomberomorus cavalla</i>	KGM	1940
MACKEREL SNAKE	<i>Trichiuridae sp.</i>	TRX	2504
MACKEREL SPANISH	<i>Scomberomorus maculatus</i>	SMK	3840
MARINE MAMMALS	<i>Mammalia</i>	MAM	9010
MARLIN BLUE	<i>Makaira nigricans</i>	BUM	2179
MARLIN WHITE	<i>Tetrapturus albidus</i>	WHM	2177
MENHADEN	<i>Brevoortia sp.</i>	MEN	0067
MENHADEN ATLANTIC	<i>Brevoortia tyrannus</i>	MAT	0068
MENHADEN GULF	<i>Brevoortia patronus</i>	MGU	0069
MENHADEN YELLOWFIN	<i>Brevoortia smithi</i>	MYF	0070
MIX	<i>Mixed Species</i>	MIX	0001
MOLLUSC	<i>Mollusca</i>	MOL	0002
MOONFISH	<i>Selene setapinnis</i>	MNF	0071
MULLET SILVER	<i>Mugil curema</i>	MSI	2346
NEEDLEFISH ATLANTIC	<i>Strongylura marina</i>	ATN	0190
OCTOPUS	<i>Cephalopoda</i>	OCT	0005
OILFISH (ROUGH SKIN)	<i>Revetus pretiosus</i>	OIL	2502
OPAH	<i>Lampris guttatus</i>	OPA	2503
PERCH SAND	<i>Diplectrum formosum</i>	PSA	3110
PERCH SILVER	<i>Bairdiella chrysoura</i>	PSI	0072
PERMIT	<i>Trachinotus falcatus</i>	PER	0073
PIGFISH	<i>Orthopristis chrysoptera</i>	PIG	0074
PILOTFISH	<i>Naucrates ductor</i>	PLF	0075
PINFISH	<i>Lagodon rhomboides</i>	PIN	2670
POMFRETS	<i>Brama sp.</i>	POA	2710
POMPANO AFRICAN	<i>Alectis ciliaris</i>	PAF	2719

POMPANO FLORIDA	<i>Trachinotus carolinus</i>	PFL	2720
PORCUPINEFISH	<i>Diodon hystrix</i>	POQ	3579
PORGY FAMILY	<i>Sparidae</i>	PRG	3580
PORGY GRASS	<i>Calamus arctifrons</i>	PGS	3305
PORGY JOLTHEAD	<i>Calamus bajonado</i>	JPO	3312
PORGY KNOBBED	<i>Calamus nodosus</i>	PKN	3308
PORGY LITTLEHEAD	<i>Calamus proridens</i>	POL	0076
PORGY RED	<i>Pagrus pagrus</i>	PRD	3300
PORGY SAUCEREYE	<i>Calamus calamus</i>	POS	0077
PORGY SILVER	<i>Diplodus argenteus</i>	SPR	3313
PORGY WHITEBONE	<i>Calamus leucosteus</i>	POW	0078
PUFFER FAMILY	<i>Tetraodontidae</i>	PUX	2760
PUFFER OCEANIC	<i>Lagocephalus lagocephalus</i>	PUL	2769
PUFFER SMOOTH	<i>Lagocephalus laevigatus</i>	PSL	2761
PUFFER SPINY FAMILY	<i>Diodontidae</i>	PUS	0079
RAINBOW RUNNER	<i>Eleganyis bipinnulata</i>	RUN	1814
RAY BULLNOSE	<i>Myliobatis freminvillei</i>	RBV	3652
RAY BUTTERFLY	<i>Gymnura sp.</i>	RBT	3651
RAY COWNOSE	<i>Rhinoptera bonasus</i>	RCN	3653
RAY DEVIL	<i>Mobula hypostoma</i>	DEV	3654
RAY EAGLES	<i>Myliobatis sp.</i>	EAG	3655
RAY LESSER ELECTRIC	<i>Narcine brasiliensis</i>	RLE	0080
RAY MANTA	<i>Manta birostris</i>	RMA	0081
RAY SPOTTED EAGLE	<i>Aetobatis narinari</i>	SPE	3656
REMORA	<i>Remora remora</i>	RRM	0082
REMORA FAMILY	<i>Echeneidae</i>	REM	2865
ROSEFISH BLACK BELLIED	<i>Helicolenus dactylopterus</i>	RBB	2420
RUDDERFISH BANDED	<i>Seriola zonata</i>	RUD	1817
SAILFISH	<i>Istiophorus platypterus</i>	SAL	0083
SAILFISH ATLANTIC	<i>Istiophorus albicans</i>	SAI	3026
SAND FLEA	<i>Crustacea</i>	SFE	7109
SAWFISH LARGETOOTH	<i>Pristis pristis</i>	LSW	3506
SAWFISH SMALLTOOTH	<i>Pristis pectinata</i>	SSW	0084
SCORPIONFISH FAMILY	<i>Scorpaenidae</i>	SCO	0085
SCORPIONFISH LONGSPINE	<i>Pontinus longispinis</i>	SCL	0097
SCORPIONFISH SPINYCHEEK	<i>Neomerinthe hemingwayi</i>	SCS	0086
SEA CUCUMBER	<i>Holothuroidea</i>	CUC	8085
SEA LICE	<i>Amphipoda</i>	LIC	7111
SEABASS BANK	<i>Centropristis ocyurus</i>	SBB	3375
SEABASS BLACK	<i>Centropristis striata</i>	SBL	0087
SEABASS FAMILY	<i>Serranidae</i>	SBF	0088
SEABASS ROCK	<i>Centropristis philadelphica</i>	SBR	3362
SEAHORSE LINED	<i>Hippocampus erectus</i>	SHL	0112
SEAROBIN LEOPARD	<i>Prionotus scitulus</i>	SEL	0008
SEAROBINS	<i>Prionotus sp.</i>	SER	0089
SEATROUT SILVER	<i>Cynoscion nothus</i>	STS	0091
SEATROUT WEAKFISH	<i>Cynoscion regalis</i>	STW	0092
SEATROUTS	<i>Cynoscion sp.</i>	STT	0090

SHAD	<i>Alosa sp.</i>	SHA	3474
SHARK ATLANTIC ANGEL	<i>Squatina dumerili</i>	ANG	3582
SHARK ATLANTIC SHARPNOSE	<i>Rhizoprionodon terraenovae</i>	SAS	3518
SHARK BIGNOSE	<i>Carcharhinus altimus</i>	SBG	3491
SHARK BLACKNOSE	<i>Carcharhinus acronotus</i>	SBN	3485
SHARK BLACKTIP	<i>Carcharhinus limbatus</i>	SBK	3495
SHARK BLUE	<i>Prionace glauca</i>	BSH	3504
SHARK BONNETHEAD	<i>Sphyrna tiburo</i>	BHH	3483
SHARK BULL	<i>Carcharhinus leucas</i>	SBU	3497
SHARK COW SHARKS	<i>Hexanchidae</i>	SCW	3577
SHARK CROCODILE	<i>Pseudocarcharias kamoharai</i>	SCR	3578
SHARK DOGFISH CHAIN CATSHARK	<i>Scyliorhinus retifer</i>	DGC	3520
SHARK DOGFISH CUBAN	<i>Squalus cubensis</i>	DCU	3531
SHARK DOGFISH FAMILY	<i>Squalidae</i>	SDG	3503
SHARK DOGFISH ROUGHSKIN	<i>Cirrhigaleus asper</i>	DGR	3535
SHARK DOGFISH SHORTSPINE	<i>Squalus mitsukurii</i>	DGM	3534
SHARK DOGFISH SMOOTH	<i>Mustelus canis</i>	DGS	3511
SHARK DOGFISH SPINEY	<i>Squalus acanthias</i>	DGY	3521
SHARK DUSKY	<i>Carcharhinus obscurus</i>	DUS	3514
SHARK FINETOOTH	<i>Carcharhinus isodon s</i>	SFT	3481
SHARK FINS	<i>Shark fins</i>	FIN	3475
SHARK GALAPAGOS	<i>Carcharhinus galapagensis</i>	GAL	3492
SHARK GREENLAND	<i>Somniosus microcephalus</i>	SGR	3532
SHARK GULPER	<i>Centrophorus granulosus</i>	GLP	3533
SHARK HAMMERHEAD	<i>Sphyrna sp.</i>	XHH	3516
SHARK HAMMERHEAD GREAT	<i>Sphyrna mokarran</i>	GHH	3524
SHARK HAMMERHEAD SCALLOPED	<i>Sphyrna lewini</i>	SPL	3523
SHARK HAMMERHEAD SMOOTH	<i>Sphyrna zygaena</i>	SHH	3522
SHARK HOUNDSHARK FAMILY	<i>Triakidae</i>	SHD	3536
SHARK LEMON	<i>Negaprion brevirostris</i>	LEM	3517
SHARK MACKEREL FAMILY	<i>Lamnidae</i>	SMF	0093
SHARK MAKO	<i>Isurus sp.</i>	XMA	3571
SHARK MAKO LONGFIN	<i>Isurus paucus</i>	LMA	3502
SHARK MAKO SHORTFIN	<i>Isurus oxyrinchus</i>	SMA	3505
SHARK NIGHT	<i>Carcharhinus signatus</i>	SNI	3494
SHARK NURSE	<i>Ginglymostoma cirratum</i>	NUR	3480
SHARK OCEANIC WHITETIP	<i>Carcharhinus longimanus</i>	OCS	3498
SHARK PORBEAGLE	<i>Lamna nasus</i>	POR	3501
SHARK REEF	<i>Carcharhinus perezi</i>	SRF	3490
SHARK REQUIEM FAMILY	<i>Carcharhinidae</i>	SRQ	0094
SHARK SAND TIGER	<i>Carcharias taurus</i>	SST	3482
SHARK SANDBAR	<i>Carcharhinus plumbeus</i>	SSB	3513
SHARK SEVENGILL	<i>Heptranchias perlo</i>	SEV	3587
SHARK SILKY	<i>Carcharhinus falciformis</i>	FAL	3493
SHARK SIXGILL BIGEYE	<i>Hexanchus vitulus</i>	BSX	3529
SHARK SIXGILL BLUNTNOSE	<i>Hexanchus griseus</i>	SIX	3528
SHARK SMOOTHHOUND FLORIDA	<i>Mustelus norrisi</i>	SFL	3507
SHARK SPINNER	<i>Carcharhinus brevipinna</i>	SSP	3496

SHARK THRESHER	<i>Alopias sp.</i>	XTH	3500
SHARK THRESHER BIGEYE	<i>Alopias superciliosus</i>	BTH	3510
SHARK THRESHER COMMON	<i>Alopias vulpinus</i>	PTH	3509
SHARK TIGER	<i>Galeocerdo cuvier</i>	TIG	3515
SHARK WHITE	<i>Carcharodon carcharias</i>	GWS	3512
SHARKS	<i>Elasmobranchii</i>	SHX	3508
SHARKSUCKER	<i>Echeneis naucrates</i>	SUK	2863
SHARKSUCKER WHITEFIN	<i>Echeneis neucratoides</i>	WSK	2864
SHEEPSHEAD	<i>Archosargus probatocephalus</i>	SHE	0095
SHRIMP	<i>Dendrobranchia</i>	SHP	7381
SHRIMP PENAEID	<i>Penaeidae</i>	SHR	7380
SKATE CLEARNOSE	<i>Raja eglanteria</i>	CLE	3657
SKATE ROUNDEL	<i>Raja texana</i>	SRD	3664
SKATE SAN BLAS	<i>Dipturus garricki</i>	SBS	3661
SKATE WINTER	<i>Leucoraja ocellata</i>	WIS	3662
SKATES AND RAYS	<i>Rajiformes</i>	SRX	3650
SNAKEFISH	<i>Trachinocephalus myops</i>	SKF	0108
SNAPPER BLACK	<i>Apsilus dentatus</i>	BSN	3755
SNAPPER BLACKFIN	<i>Lutjanus buccanella</i>	BFS	3757
SNAPPER CARDINAL	<i>Pristipomoides macrophthalmus</i>	CRS	3773
SNAPPER CUBERA	<i>Lutjanus cyanopterus</i>	CSN	3759
SNAPPER DOG	<i>Lutjanus jocu</i>	DSN	3754
SNAPPER FAMILY	<i>Lutjanidae</i>	SNA	0096
SNAPPER GRAY	<i>Lutjanus griseus</i>	SNG	3762
SNAPPER LANE	<i>Lutjanus synagris</i>	LUL	3761
SNAPPER MAHOGANY	<i>Lutjanus mahogoni</i>	MHS	3772
SNAPPER MUTTON	<i>Lutjanus analis</i>	MSN	3763
SNAPPER QUEEN	<i>Etelis oculatus</i>	QSN	3770
SNAPPER RED	<i>Lutjanus campechanus</i>	RSN	3764
SNAPPER SCHOOLMASTER	<i>Lutjanus apodus</i>	SMS	3771
SNAPPER SILK	<i>Lutjanus vivanus</i>	SNS	3758
SNAPPER VERMILLION	<i>Rhomboplites aurorubens</i>	SNV	3765
SNAPPER WENCHMAN	<i>Pristipomoides aquilonaris</i>	WNS	3756
SNAPPER YELLOWTAIL	<i>Ocyurus chrysurus</i>	YTS	3767
SPADEFISH	<i>Chaetodipterus faber</i>	SPD	0100
SPEARFISH LONGBILL	<i>Tetrapturus pfluegeri</i>	SPF	4010
SPEARFISH ROUNDSCALE	<i>Tetrapturus georgei</i>	SPG	4009
SPEARFISHES	<i>Tetrapturus sp.</i>	SPX	4000
SPONGE	<i>Porifera</i>	PRF	8200
SPOT	<i>Leiostomus xanthurus</i>	SPO	0101
SQUID	<i>Cephalopoda</i>	SQI	8030
SQUIRRELFISHES	<i>Holocentrus sp.</i>	SQU	4120
STARFISH	<i>Asteroidea</i>	STF	8280
STINGRAY ATLANTIC	<i>Dasyatis sabina</i>	SAT	0102
STINGRAY BLUNTNOSE	<i>Dasyatis sayi</i>	SBO	3659
STINGRAY PELAGIC	<i>Pteroplatytrygon violacea</i>	SPS	3663
STINGRAY ROUGHTAIL	<i>Dasyatis centroura</i>	SRO	3658
STINGRAY SOUTHERN	<i>Dasyatis americana</i>	SSO	3660

STINGRAYS	<i>Dasyatis sp.</i>	STR	2862
STURGEON ATLANTIC	<i>Acipenser oxyrhyncus</i>	STA	0103
STURGEONS	<i>Acipenser sp.</i>	STU	0104
SUNFISHES	<i>Mola sp.</i>	MOX	4260
SWORDFISH	<i>Xiphius gladius</i>	SWO	4320
TARPON	<i>Megalops atlanticus</i>	TAR	4350
TILEFISH	<i>Lopholatilus chamaeleonticeps</i>	TIL	4470
TILEFISH ANCHOR	<i>Caulolatilus intermedius</i>	ANT	4479
TILEFISH BLACKLINE	<i>Caulolatilus cyanops</i>	BKT	4476
TILEFISH BLUELINE (GRAY)	<i>Caulolatilus microps</i>	BLT	4474
TILEFISH GOLDFACE	<i>Caulolatilus chrysops</i>	GFT	4472
TILEFISH SAND	<i>Malacanthus plumieri</i>	MAL	4478
TOADFISH FAMILY	<i>Batrachoididae</i>	TOD	4500
TOADFISH GULF	<i>Opsanus beta</i>	TOG	4501
TOADFISH LEOPARD	<i>Opsanus pardus</i>	TOL	4502
TOMTATE	<i>Haemulon aurolineatum</i>	TOM	0105
TRIGGERFISH GRAY	<i>Basistes capriscus</i>	TRG	0106
TRIGGERFISH QUEEN	<i>Balistes vetula</i>	TRQ	4563
TRIPLETAIL	<i>Lobotes surinamensis</i>	TRI	0107
TUNA ALBACORE	<i>Thunnus alalunga</i>	ALB	4651
TUNA BIGEYE	<i>Thunnus obesus</i>	BET	4657
TUNA BLACKFIN	<i>Thunnus atlanticus</i>	BLK	4658
TUNA SKIPJACK	<i>Euthynnus pelamis</i>	SKJ	4654
TUNA YELLOWFIN	<i>Thunnus albacares</i>	YFT	4655
TUNAS	<i>Thunnus sp.</i>	TUN	4656
TURTLE GREEN	<i>Chelonia mydas</i>	TTG	8112
TURTLE HAWKSBILL	<i>Eretmochelys imbricata</i>	THB	8113
TURTLE KEMP'S RIDLEY	<i>Lepidochelys kempi</i>	TKR	8119
TURTLE LEATHERBACK	<i>Dermochelys coriacea</i>	TLB	8118
TURTLE LOGGERHEAD	<i>Caretta caretta</i>	TTL	8114
TURTLES	<i>Turtle</i>	TTX	8120
UNCODED ANIMAL	<i>Uncoded animal</i>	UNC	9999
UNKNOWN ANIMAL	<i>Unknown animal</i>	UNK	0000
UNKNOWN POPPED HOOK TIMER	<i>Unknown popped hook timer</i>	UHT	9998
UNKNOWN TELEOST	<i>Osteichthyes</i>	TEL	5350
UNPOPPED HOOK TIMER	<i>Unpopped hook timer</i>	UHH	9997
URCHIN SEA	<i>Echinodermata</i>	URC	0003
WAHOO	<i>Acanthocybium solanderi</i>	WAH	4710
WHALE BEAKED	<i>Ziphiidae</i>	WBK	9048
WHALE KILLER	<i>Orcinus orca</i>	MKW	9020
WHALE NORTH BOTTLENOSE	<i>Hyperoodon ampullatus</i>	WNB	9049
WHALE PILOT	<i>Globicephala sp.</i>	MPW	9026
WHALE PILOT LONGFIN	<i>Globicephala melas</i>	PWL	9027
WHALE PILOT SHORTFIN	<i>Globicephala macrorhynchus</i>	PWS	9028
WHALE RIGHT NORTH ATLANTIC	<i>Eubalaena glacialis</i>	MRW	9029
WHALE SPERM PYGMY	<i>Kogia breviceps</i>	PSW	9013
WHALES	<i>Whale</i>	WHA	9006
WHIFF BAY	<i>Citharichthys spilopterus</i>	WFB	0110
WORM	<i>Polychaeta</i>	WOR	0004
WRASSE FAMILY	<i>Labridae</i>	WRA	1880

PROTECTED SPECIES INTERACTION INSTRUCTIONS

If at any time during an observed trip a marine mammal, sea turtle, sawfish, sturgeon or sea bird directly contacts the vessel, or the vessel's fishing gear AND any part of the animal is entangled, snagged, ensnared, caught, hooked, collided with, hit, injured or killed by the vessel or its gear, regardless of the final condition and release of the animal, it should be documented. If a dead or injured marine mammal, sea turtle, sawfish, sturgeon or sea bird is seen in the water during or immediately after a haul back, the observer must decide if the animal was once entangled in the gear of the vessel (i.e. whether the animal is determined to be an incidental take). Gear or gear marks on the animal and/or damage to the fishing gear may help to distinguish incidental takes from sightings.

FOR ALL INCIDENTAL TAKES, A RECORD IS ENTERED IN ANIMAL LOG AND THE SPECIES-APPROPRIATE INCIDENTAL TAKE LOG FILLED OUT

ALL ANIMALS INCIDENTALLY TAKEN MUST BE PHOTOGRAPHED AS PHOTOS ARE NECESSARY TO ASSIST IN SPECIES IDENTIFICATION

FOR INCIDENTALLY CAUGHT MARINE MAMMALS:

- 1) **Contact your observer coordinator FIRST and IMMEDIATELY.** Your coordinator will contact the marine mammal stranding hotline for further instructions. The marine mammal coordinator may then call you with further instructions.
If you are unable to get in touch with your coordinator, notify the captain and call the marine mammal emergency stranding pager – **305-862-2850**.
- 2) Report the location (Lat/Long), the degree of entanglement, and take photographs of the marine mammal and any distinguishing characteristics (callosities, flukes).
- 3) Once directions have been given from your observer coordinator and the marine mammal coordinator, then proceed to fill out the **MARINE MAMMAL INCIDENTAL TAKE LOG**.
- 4) If actual measurements or samples are collected, then proceed to fill out the **MARINE MAMMAL BIOLOGICAL SAMPLE LOG**.
- 5) If animal is dead, flag carcass with surveyor tape/spray paint before discarding carcass.

FOR INCIDENTALLY CAUGHT SEA TURTLES:

- 1) Report incidental catch to your observer coordinator upon landing or during your weekly call (while at sea).
- 2) Fill out the species-appropriate **SEA TURTLE LIFE HISTORY FORM**.
- 3) If animal is dead, flag carcass with surveyor tape/spray paint before discarding carcass.

FOR INCIDENTALLY CAUGHT SAWFISH, STURGEON OR SEABIRDS:

- 1) Report incidental catch to your observer coordinator upon landing or during your weekly call (while at sea).
- 2) Fill out the species-appropriate **PROTECTED RESOURCES FORM**.
- 3) Sampling protocols can be found after the form instructions at the end of this section.
- 4) If animal is dead, collect samples and then flag carcass with surveyor tape/spray paint before discarding carcass.

MARINE MAMMAL INCIDENTAL TAKE LOG INSTRUCTIONS

The purpose of this log is to document incidentally taken marine mammals. Complete a record on this log for each incidental take. If more than one animal is taken at a time, record each animal on a separate line. The same log may be used for all incidental takes occurring on a trip, regardless of haul number, if they are all caught by the same vessel. Enter each animal onto the log sheet as a separate entry, take a photograph to confirm species identification, and record detailed comments describing how the animal was involved in the gear, including the position of hook (if hooked) or description of how animal was entangled. Also note how much gear was left attached to the animal upon release and whether any injury was evident. This log should not include animals that may be observed near the gear but animals that are: mouth hooked, hook snagged, entangled in the gangion, nets, dropline, or mainline. Each animal should be entered onto the log sheet as a separate entry, photographed to confirm species identification and record detailed comments describing how the animal was involved in the gear including the position of hook, if hooked or description of how animal was entangled. Also note how much gear was left attached to the animal upon release and whether any injury was evident.

DO NOT RECORD INFORMATION ON SEA TURTLES OR SEA BIRDS ON THIS LOG. THESE ANIMALS SHOULD BE RECORDED ON THE RESPECTIVE SPECIES-SPECIFIC INCIDENTAL TAKE LOGS.

If an entanglement of a marine mammal occurs, follow these guidelines:

FIRST AND IMMEDIATELY - CALL YOUR OBSERVER COORDINATOR!!!

YOUR COORDINATOR WILL CONTACT THE MARINE MAMMAL COORDINATOR FOR FURTHER INSTRUCTION.

If you are unable to get in touch with your coordinator, follow the instructions below:

- Notify the captain and call the marine mammal emergency stranding pager – 305-862-2850.
- Report the location (Lat/Long), the degree of entanglement, and take photographs of the marine mammal and any distinguishing characteristics (callosities, flukes).
- Once directions have been given from your observer coordinator and the marine mammal coordinator, then proceed to fill out the **MARINE MAMMAL INCIDENTAL TAKE LOG**.
- If animal is dead, flag carcass with surveyor tape/spray paint before discarding carcass.

If the captain is unwilling to cooperate with any of the above procedures, the observer will be required to document the events.

HEADER

1. **OBS/TRIP IDENTIFIER:** Record your 3 character observer identifier + 3 digit numeric number for this trip. Example: LFH-001
2. **DATE LANDED:** Record the date the vessel returned to the dock. This may not be the same date as the unloading.
3. **PAGE NUMBER:** Record Page 1 OF _____ (Total number of Incidental Take logs)

INCIDENTAL TAKE INFORMATION

4. **PSID #:** PROTECTED SPECIES ID NUMBER

A consecutive identification number (Protected Species ID) is assigned to each animal that is incidentally taken on this trip. If there are insufficient lines on one form to record all animals caught on this trip, continue listing animals on an additional Marine Mammal Incidental Take Log, making sure to fill in the preceding number.

4. **HAUL NUMBER:** Record the haul number in which this animal occurred.

5. **GEAR NUMBER:** Record the gear number assigned to this uniquely identified gear in which the animal was taken, as specified on the corresponding Gear Characteristics Log (ex. String 1, String 2, etc.)

6. **TIME (24 hours):** Record the local time using the 24 hour clock (0000-2359) that each animal was brought onboard or alongside the vessel. (Example: 20:32)

7. **ADD COND CODE:** ACTIVE DETERRENT DEVICE CONDITION

FOR GILLNET ONLY Record the condition of the active deterrent device that immediately follows an incidental take by recording the most appropriate code:

- | | |
|---|------------------------------------|
| 0 | Unknown. |
| 1 | No Pingers Used On Gear. |
| 2 | Audible. |
| 3 | Inaudible, Tested and Working. |
| 4 | Inaudible, Tested and Not Working. |
| 5 | Inaudible. Not Tested. |
| 6 | Absent (Lost). |
| 9 | Other. Describe in COMMENTS. |

NOTE: "Tested" means the pinger signal was measured using a testing tool provided by the Observer Program.

NOTE: If possible record the condition of the active deterrent device that immediately precedes an incidental take in COMMENTS.

8. **SPECIES NAME:** Record the common name for species taken. NOTE: If it is not possible to make a positive species identification, identify the animal to the most specific generic group of which you are positive, i.e. baleen whale, unidentified dolphin, seal, etc.

PHOTOGRAPHS SHOULD BE TAKEN FOR ALL INCIDENTAL TAKES

9. **SPECIES CODE:** Record the 4 number code for the species taken from the INCIDENTAL SPECIES CODE LIST.

10. **TAG NUMBERS:** Record the complete alphanumeric numbers from the tag(s) that you attach or that were already attached to the animal. Example: D09999

11. **TAG CODES:** Indicate the origin of the tag number recorded above, for each tag attached to the animal, by recording the appropriate one digit code:

- 0 Unknown.
- 1 Tag Applied by Observer.
- 2 No Tag(s).
- 3 Tags Already Present, Left On.
- 4 Tags Already Present, Removed.

12. **ENTANGLEMENT SITUATION:** Indicate the initial entanglement situation of the animal by recording the most appropriate two digit code:

- 00 Unknown.
- 01 Fell from gear at a point unknown, i.e. animal fell from gear, but time during haulback unknown.
- 02 Fell from gear before exiting water
- 03 Fell from gear once hauled out of water, i.e. animal mostly/ completely out of water when fell from gear because weight and pulling action of net
- 04 Fell from gear due to force of roller. i.e. animal reached roller and it's force caused it to fall from gear.
- 05 Removal requires cutting of gear/animal
- 06 Removal does NOT require cutting of gear/animal. i.e. pulling, unwrapping, unrolling, and/or detangling gear allows animal to be removed from gear, without cutting gear and/or animal.
- 12 Hooked, ingested.
- 14 Hooked, head.
- 17 Hooked, other/unknown. Describe situation in COMMENTS.
- 28 Contact with vessel or vessel equipment other than fishing gear.
- 29 Entangled in gear other than vessel's fishing gear (e.g. ghost gear)
- 99 Other. Describe situation in COMMENTS.

NOTE: If more than one code applies to a situation choose the code that describes the primary entanglement/interaction.

13. ANIMAL CONDITION CODE: Indicate the condition of the animal when released by recording the most appropriate two digit code:

- 00 Unknown. Explain why you can not identify the animal condition in COMMENTS.
- 01 Alive, see COMMENTS.
- 04 Alive, hook/gear in/around mouth, attempt to determine where in the mouth the hook is, etc. and describe in COMMENTS.
- 05 Alive, hook/gear in/around flipper. Describe more fully in COMMENTS.
- 06 Alive, hook/gear in/around another single body part, i.e. hook in the neck; specify which in COMMENTS.
- 07 Alive, hook/gear in/around several body parts, describe more fully in COMMENTS
- 08 Alive, seen by captain and/or crew ONLY
- 10 Dead, condition unknown.
- 11 Dead, fresh. See Figure 1.
- 12 Dead, moderately decomposed. See Figure 2.
- 13 Dead, severely decomposed. See Figure 3.
- 14 Dead, seen by captain and/or crew ONLY

NOTE: For more descriptive details on dead animal condition codes, specifically, dead fresh, dead moderately decomposed, and dead severely decomposed, see ANIMAL CONDITION CODES (WHEN RELEASED) at the end of this section.

NOTE: If more than one code applies, choose the code that describes the most specific condition of the animal (e.g. a dolphin is alive and released with gear around the left front flipper – chose code 05 as it is the most specific).

NOTE: Additional comments about the condition of the animal must be recorded in the COMMENTS as these data are needed for obtaining better information on the condition at the time of capture. Document how much of the animal was examined (i.e. only dorsal and lateral sides seen). Thoroughly describe new and/or healed wounds, the amount and location of scavenger damage and/or decomposition, the firmness and coloration of tissues, condition of the skin (i.e. cracked, sloughing, dull, glossy), the presence or absence of blood (record if bleeding), and any missing parts. Include descriptive comments about the animal's behavior on deck and upon release (lethargic, active, calm, vocalizing, struggling, swam away, sank, floated at surface, righted itself, dove, breathing patterns, etc.). Also record the amount and location of gear remaining on the animal.

14. ANIMAL ONBRD?: ANIMAL ONBOARD?

Indicate whether the animal was brought onboard the vessel by recording the appropriate one digit code.

- 0 No. Note the reason in COMMENTS.
1 Yes.

15. **PHOTOS TAKEN?:** Indicate whether any photograph(s) are taken of the animal by recording the appropriate one digit code:

- 0 No. Note the reason in COMMENTS.
1 Yes.

All marine mammals incidentally taken must be photographed as photos are necessary to assist in corroborating species identification. Only under extreme conditions should this field reflect that no photos were taken.

16. **SAMPLED?:** Indicate whether this animal has been measured or sampled by recording the appropriate one digit code:

- 0 No. Note the reason in COMMENTS.
1 Yes.

17. **EST. LENGTH:** Record an estimated FL to the nearest centimeters (30 cm=1 foot). For marine mammals, the estimated length should be a straight line estimate of total length. If actual measurements are taken on this animal, record a dash (-) in this field. Actual measurements are recorded on the Marine Mammal Biological Sample Log.

18. **COMMENTS:** Record details about how the animal was involved in the gear, how much gear (nearest foot) was left attached to the animal and the condition of the animal upon its release. Record any additional information regarding the incidental take(s), especially when data are unable to be collected. The COMMENTS section should include a list of identifying characteristics, details on the entanglement situation and a description of the overall condition of the animal. If more room is needed, use the back of this log, making sure to indicate "See Back" on the front. Reference each comment with it's corresponding field name and PSID.

EXAMPLE: Animal was tail wrapped in a dropline, 2 wraps, approx 4' mono left attached animal dove downward strongly, no evidence of injury.

EXAMPLE: Animal dead. Throat hooked, trying to take the bait. Water soaked condition of the body suggests it may have been taken during the set.

ANIMAL CONDITION CODES (WHEN RELEASED)

Dead, Fresh (code 11)

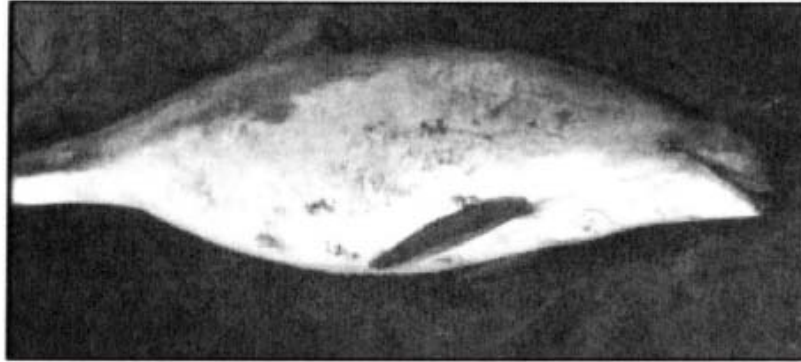


Figure 1. Illustration of Animal Condition Code 11 (NOTE: Illustrations is of a pregnant female)

Normal appearance (as if the animal was still alive). Carcass not bloated with gas and/or when body punctured - no sound of gas escaping. Tongue and penis not bloated and/or protruding. Body, muscles, and blubber firm to the touch. Muscle tissue appearance close to that of meat for human consumption. Blubber creamy white or pinkish coloration, no evidence of liquefying fat. Skin can not be easily pulled or separated from underlying tissue. Eyes, when present, may be clear, cloudy blue/white, or red. May have white foam seeping from mouth/blowhole. May have fresh scavenger damage with tissue missing, but remaining muscle-firm pink/red; blubber-firm, creamy white to pink; skin-firm with normal coloration; and organs still easily distinguishable. Easily recognizable or identifiable to species.

Dead, Moderately Decomposed (code 12)

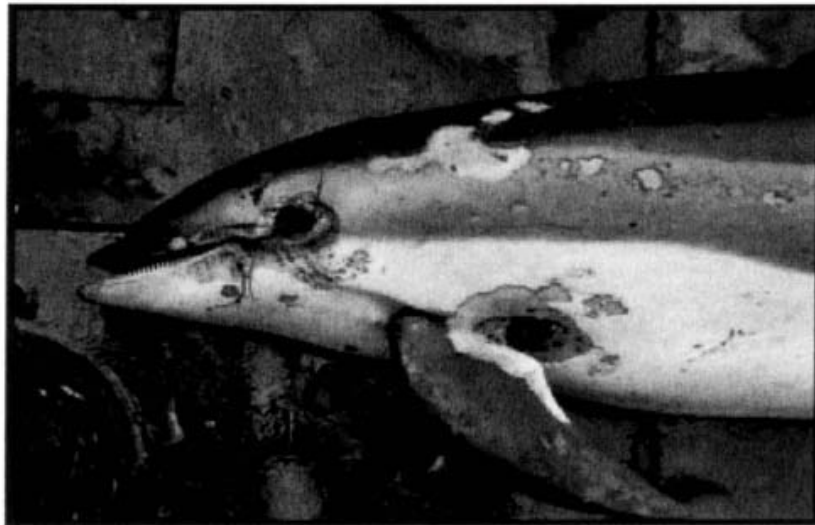


Figure 2. Illustration of Animal Condition Code 12

Does not appear as if it was "just alive or swimming". Carcass bloated with decomposition gases and/or if body cavity can be punctured- likely to have gas escape or body cavity collapse. Tongue and/or penis may be bloated and protruding from orifices. Skin cracked and sloughing, may be easily separated from underlying body tissue. Hair may easily be separated from underlying tissue without tugging or stroking. Edges of wounds/tissue damage likely to be soft and mushy with grayish/whitish coloration. Muscle tissues likely to be soft and poorly defined and pinkish white/gray in coloration. Organs/musculature mostly intact but different types may not be easily distinguishable. Carcass may be intact but collapsed due to internal

tissue/organ deterioration. Tissues usually smell strongly of rotting flesh. May be fragile but can usually be moved mostly intact. Recognizable by species (even though body parts may be missing).

Dead, Severely Decomposed (code 13)

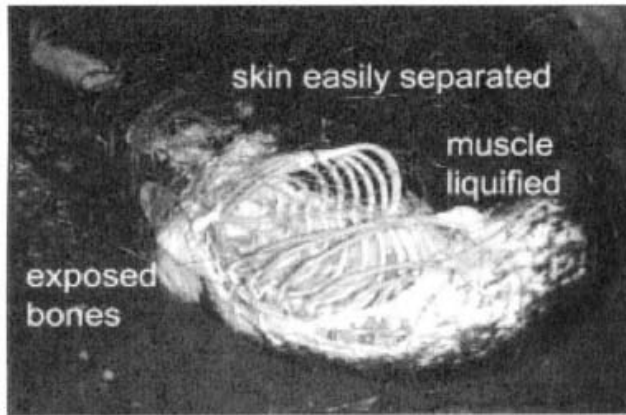


Figure 3. Illustration of Animal Condition Code 13



Figure 4. Close up of head of animal illustrated in Figure 3

Any remaining skin/hair is easily separated from underlying tissue. Where skin/hair is gone, exposed blubber and other soft tissue is mushy and ill-defined. Muscle/blubber may be liquefied and/or falling off bones. Muscle tissue usually uniform in coloration and texture with no distinct fibers visible. Tissues/organs exuding from body are dull in coloration with little visible distinction between tissue/organ type. Carcass may be collapsed and deteriorating or partially intact. Connective tissue holding bones together is soft and deteriorating. Unrecognizable to species or species group by typical coloration, patterns, or markings.

MARINE MAMMAL INCIDENTAL TAKE LOG
NMFS SOUTHEAST FISHERIES OBSERVER PROGRAM
OBINC 01/01/10

OBS/TRIP ID	
DATE LANDED mm/yy	/
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>

PSID #	HAUL NUM	GEAR NUM		TIME (24 hours)	ADD COND CODE	SPECIES		TAG		ENTANG SITU CODE	ANIMAL COND CODE	ANIMAL ONBRD? 0=No 1=Yes	PHOTO TAKEN? 0=No 1=Yes	SAMPLED? 0=No 1=Yes	EST LEN (cm) (if no actual)
						NAME	CODE	NUMBER(S) (record most recent first)	CODE(S)						
___ 1				:											
___ 2				:											
___ 3				:											
___ 4				:											
___ 5				:											
___ 6				:											
___ 7				:											
___ 8				:											
___ 9				:											
___ 0				:											

COMMENTS: List identifying characteristics, describe in detail the entanglement situation, include a description of the overall body condition of the animal, behavior on deck and upon release and any other related information. Use back of log if more room is needed.

OBS/TRIP ID	
DATE LANDED mm/yy	/
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>

<p>ACTIVE DETERRENT DEVICE (ADD) CONDITION CODES:</p> <p>0 = Unknown</p> <p>1 = No Pingers Used On Gear</p> <p>2 = Audible</p> <p>3 = Inaudible, Tested and Working</p> <p>4 = Inaudible, Tested and Not Working</p> <p>5 = Inaudible, Not Tested</p> <p>6 = Absent (Lost)</p> <p>9 = Other</p> <p>TAG CODES:</p> <p>0 = Unknown</p> <p>1 = Tag Applied by Observer</p> <p>2 = No Tag(s)</p> <p>3 = Tag Already Present, Left On</p> <p>4 = Tag Already Present, Removed</p> <p>NOTE: Record Turtle Pit Tags on the Sample Log.</p>	<p>ENTANGLEMENT / INTERACTION SITUATION CODES:</p> <p>00 = Unknown</p> <p>01 = Fell From Gear at a Point Unknown</p> <p>02 = Fell From Gear Before Exiting Water</p> <p>03 = Fell From Gear Once Hauled Out of Water</p> <p>04 = Fell From Gear Due to Force of Roller</p> <p>05 = Removal Requires Cutting of Gear/Animal</p> <p>06 = Removal Does NOT Require Cutting of Gear/Animal</p> <p>08 = Caught in Wings of Trawl Net</p> <p>10 = Sea Bird Caught, Gangion Attached to Mainline</p> <p>11 = Sea Bird Caught, Gangion Unattached to Mainline</p> <p>12 = Hooked, Ingested</p> <p>13 = Hooked, Beak</p> <p>14 = Hooked, Head</p> <p>15 = Hooked, Flipper</p> <p>16 = Hooked, Carapace</p> <p>17 = Hooked, Other/Unknown</p> <p>NOTE: If more than one code applies to a situation choose the code that describes the primary entanglement/interaction (e.g. a turtle is observed inside the twine top of a dredge and falls from the gear as it is hauled up - choose code 21 as it best describes the primary interaction).</p>	<p>ANIMAL CONDITION CODES (when released):</p> <p>00 = Unknown</p> <p>01 = Alive, see comments</p> <p>04 = Alive, Hook/Gear In/Around Mouth</p> <p>05 = Alive, Hook/Gear In/Around Flipper</p> <p>06 = Alive, Hook/Gear In/Around Another Single Body Part</p> <p>07 = Alive, Hook/Gear In/Around Several Body Parts</p> <p>08 = Alive, Seen by Captain/Crew ONLY</p> <p>09 = Alive, resuscitated (turtle)</p> <p>10 = Dead, Condition Unknown</p> <p>11 = Dead, Fresh</p> <p>12 = Dead, Moderately Decomposed</p> <p>13 = Dead, Severely Decomposed</p> <p>14 = Dead, Seen by Capt/Crew ONLY</p> <p>NOTE: If more than one code applies, choose the code that describes the most specific condition (e.g. a turtle is alive and released with gear around the left front flipper - choose code 05 as it is most specific at release).</p>
<p>ADDITIONAL COMMENTS</p>		

MARINE MAMMAL BIOLOGICAL SAMPLE LOG

The purpose of this log is to record sex, body measurements, and biological samples taken from all incidentally taken marine mammals. For more detailed instructions on incidental take sample collection, refer to the Marine Mammal Incidental Take and Biological Sampling Guidelines section of the NEFSC Observer Program Training Manual.

INSTRUCTIONS

For instructions on completing the Header fields **A**, **B** and **C**, refer to the Common Haul Log Data section of the NEFSC Observer Program Manual.

If any of the measurements cannot be collected, record a dash (-) in the field and record the reason why it wasn't obtained in COMMENTS.

1. PSID #: Record the consecutive identification number (Protected Species ID) for each animal that is sampled during this trip. This should be the same number as recorded on the Incidental Take Log.

2. SPECIES NAME: Record the complete common name of each incidentally taken marine mammal biologically sampled on this trip, as listed in Appendix A. Species Names.

NOTE: If it is not possible to make a positive species identification, identify the animal to the most specific generic group of which you are positive, *i.e.* baleen whale, unidentified dolphin, seal *etc.*
DO NOT GUESS AT SPECIES IDENTIFICATION.

3. SEX: Indicate the sex of the marine mammal by placing an "X" next to the appropriate code:

- 0 = Unknown.
- 1 = Male.
- 2 = Female.

4. BODY TEMPERATURE: Record, to the nearest tenth of a degree Fahrenheit, the dorsal musculature temperature. This measurements should be taken for all incidental takes of cetaceans and pinnipeds. It

must be taken as close as possible to the time the animal is brought onboard, and before cutting into the animal occurs. To take a temperature, always insert the probe gently, and keep probe entry sites consistent. See Figure 1, letter H for cetaceans and Figure 2, letter D for pinnipeds.

5. BLUBBER THICKNESS: Record, to the nearest tenth of a centimeter, the thickness of the blubber of the cetacean or pinniped. Measure from where the blubber meets the muscle, up to and including the skin.

CETACEAN: To obtain this measurement, make an incision two to three inches behind the blow hole of the marine mammal. See Figure 1, letter G.

PINNIPED: To obtain this measurement, make an incision in the ventral surface of the marine mammal, about five or six inches anterior to the navel, in the middle of the body. See Figure 2, letter D.

BODY MEASUREMENTS

Six body measurements will be taken and recorded for each cetacean. Three body measurements will be taken and recorded for each pinniped.

When measurements are taken which require a mammal to be placed on one side, the preferred method is for the animal to be lying on the right side, *i.e.* **measurements taken on the left side**. The body measurements are diagramed and specified in Figures 1-3. All length measurements are recorded in whole centimeters.

Do not piece together animal parts that have been removed from the body to obtain these measurements. Rather, record a dash (-) in the field, and explain why the measurement is not taken in COMMENTS.

6. TOTAL LENGTH:

CETACEAN: Record the **straight line** length from the tip of the jaw (top or bottom jaw, whichever is longer) to the fluke notch. See Figure 1, letter A.

PINNIPED: Record the **straight line** measurement from the snout to the tip of the tail. See

Figure 2, letter A.

7. GIRTH: (circumference of animal)

CETACEAN: Record the girth of the animal just under the pectoral flippers at the axilla. See Figure 1, letter F.

PINNIPED: Record the girth of the animal just under the fore-flippers at the axilla. See Figure 2, letter C.

8. HIND FLIPPER OR PECTORAL FLIPPER LENGTH:

CETACEAN: Record the **straight line** length of one flipper of the cetacean. This length is taken from the outside or anterior edge of the flipper to the tip of the flipper. This is the longest length along the pectoral flipper. See Figure 1, letter B.

PINNIPED: Record the **straight line** length of one **rear** flipper of the pinniped. This length is taken from the outside anterior edge of the flipper at the joint where the flipper connects to the body (this is best located by flexing the flipper forward and measuring from the point where the flipper flexes) to the tip of the flipper. See Figure 2, letter B.

9. PECTORAL FLIPPER WIDTH:

CETACEAN: Using the same flipper on which the length was measured, record the **straight line** width, at its widest part. See Figure 1, letter C.

PINNIPED: No measurement taken; record a dash (-) in this field.

10. DORSAL FIN HEIGHT:

CETACEAN: Record the **straight line** height of the dorsal fin of the cetacean from the posterior tip of the fin to the insertion at the body. See Figure 1, letter D.

PINNIPED: No measurement taken; record a dash (-) in this field.

11. FLUKE WIDTH:

CETACEAN: Record the width of the flukes of the cetacean, from one tip to the other. See Figure 1, letter E.

PINNIPED: No measurements taken; record a dash (-) in this field.

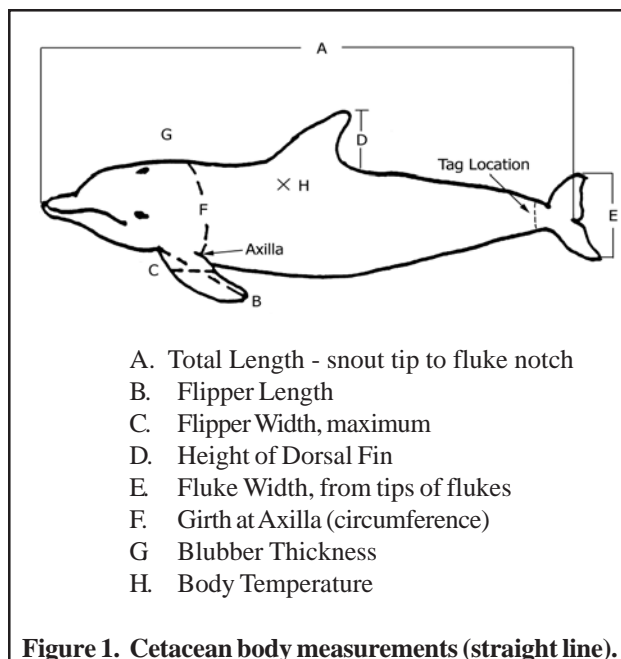


Figure 1. Cetacean body measurements (straight line).

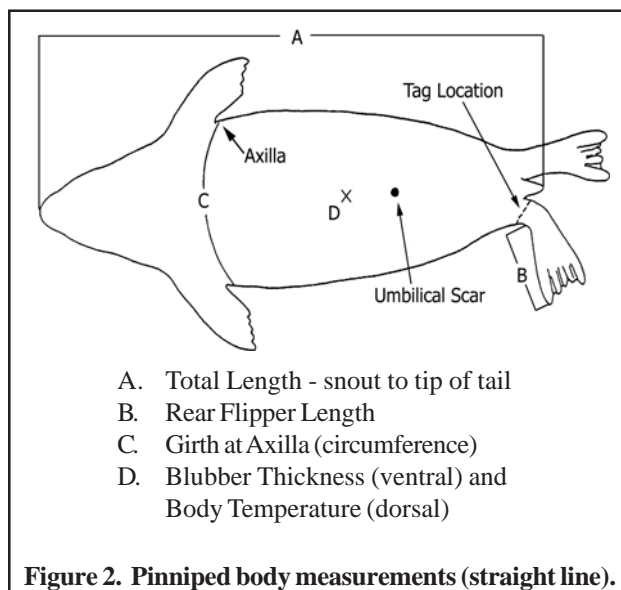


Figure 2. Pinniped body measurements (straight line).

12. WHOLE ANIMAL RETAINED?: Record "1" if the animal is retained by the observer to be brought to shore. Record "0" if the whole animal is not retained.

JAW/TISSUE/ORGAN/HEAD SAMPLES

Listed below are the samples that may be considered priorities for certain species. It is very important to determine, before you begin cutting a cetacean for

jaw/tissue/organ/head samples, if you will be able to take a **BODY TEMPERATURE MEASUREMENT** (#4). This measurement must be taken as close as possible to the time the animal is brought onboard, and before cutting into the marine mammal occurs.

For the following fields, record the **total number** of samples taken. If a sample is not taken, record a "0" (zero).

13. FINCLIP/FLIPPER/SKIN: If unable to collect sample prior to animal going overboard, always check the net/gear for skin that might be opportunistically collected.

14. JAW

15. STOMACH

16. BLUBBER

17. MUSCLE

18. REPRODUCTIVE TRACT

19. HEAD/SKULL

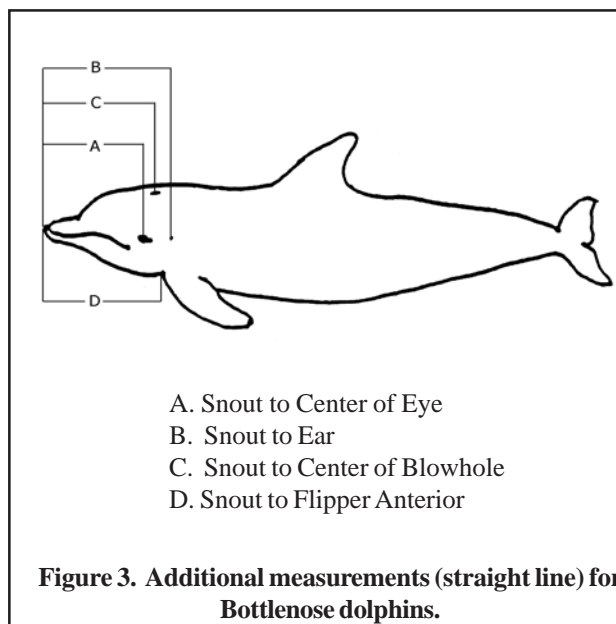
20. OTHER: Record the number of additional samples collected.

NOTE: If any additional sample(s) is (are) collected from this animal, record which ones in COMMENTS.

ADDITIONAL MEASUREMENTS FOR BOTTLENOSE DOLPHINS

In addition to the body measurements required for all incidentally taken cetaceans, the following four measurements are to be taken for all bottlenose dolphins greater than 2 meters (approximately 7 feet) in total length: **snout to center of eye**, **snout to ear**, **snout to center of blowhole** and **snout to flipper anterior**. All measurements are **straight**, made parallel to longitudinal body axis. See Figure 3.

Keep in mind that these additional measurements need to be taken before the head is removed. If time constraints necessitate choosing between taking the head or taking these additional measurements; take the head.



COMMENTS

Animal specific:

For **each animal**, document how much of the animal was examined (i.e. only dorsal and lateral sides seen). Thoroughly sketch and describe identifying characteristics, new and/or healed wounds, the amount and location of scavenger damage and/or decomposition, the firmness and coloration of tissues, condition of the skin (i.e. cracked, sloughing, dull, glossy), the presence or absence of blood (record if bleeding), any missing parts, and smell. Include comments about the animal's behavior on deck and upon release (lethargic, active, calm, vocalizing, struggling, swam away, sank, floated at surface, righted itself, dove, etc). Also record the amount and location of gear remaining on the animal. Reference each description with the animal's unique PSID # (#1) and be sure to circle which side of the animal is illustrated.

General:

Record any additional information regarding the marine mammal incidental take(s), especially when data are unable to be collected. Reference each comment with its corresponding field name.

MARINE MAMMAL BIOLOGICAL SAMPLE LOG
NMFS FISHERIES OBSERVER PROGRAM
OBBMM 01/01/10

OBS/TRIP ID	A
DATE LANDED mm/yy	B /
PAGE #	C <input type="checkbox"/> OF <input type="checkbox"/>

PSID#	SPECIES NAME	SEX 0=U 1=M 2=F	MARINE MAMMAL MEASUREMENTS					CETACEANS ONLY			NUMBER OF SAMPLES TAKEN								
			Body Temp °F	Blubber Thickness cm	Total Length cm	Axillary Girth cm	Hind/Pec Flip Len cm	Pec Flip Width cm	Dorsal Fin Height cm	Fluke Width cm	Whole	Finclip/ Flipper/ Skin	Jaw	Stom	Blub	Musc	Repro Tract	Head/ Skull	Other list in comments
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
			.	.															
			.	.															
			.	.															
			.	.															
			.	.															

General Comments:

BOTTLENOSE DOLPHIN
 PSID # _____
 A. Snout-eye (cm) _____
 B. Snout-ear (cm) _____
 C. Snout-blow (cm) _____
 D. Snout-flip (cm) _____

BOTTLENOSE DOLPHIN
 PSID # _____
 A. Snout-eye (cm) _____
 B. Snout-ear (cm) _____
 C. Snout-blow (cm) _____
 D. Snout-flip (cm) _____

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc.

PSID# _____



Circle one: Left / Right



Circle one: Dorsal / Ventral

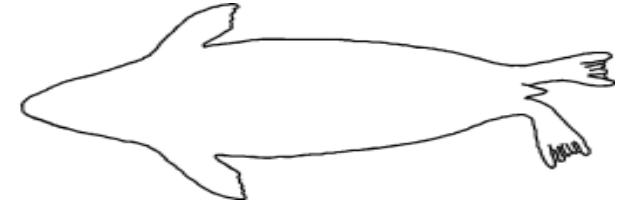
OBS/TRIP ID	A
DATE LANDED mm/yy	B /
PAGE #	C <input type="checkbox"/> OF <input type="checkbox"/>

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # _____



Circle one: Left / Right



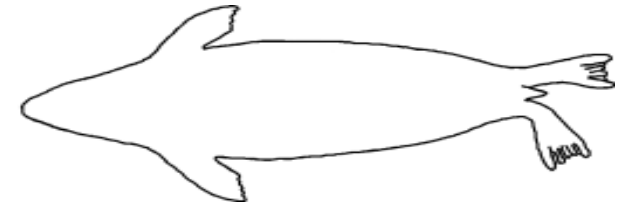
Circle one: Dorsal / Ventral

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # _____



Circle one: Left / Right



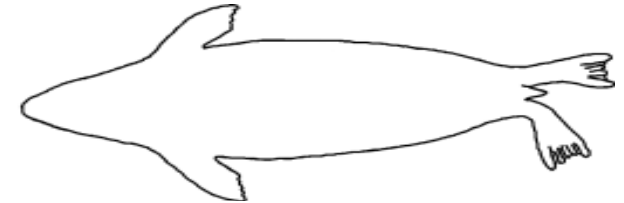
Circle one: Dorsal / Ventral

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # _____



Circle one: Left / Right



Circle one: Dorsal / Ventral

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # _____



Circle one: Left / Right



Circle one: Dorsal / Ventral

MARINE MAMMAL BIOLOGICAL SAMPLE LOG
NMFS FISHERIES OBSERVER PROGRAM
OBBMM 01/01/10

OBS/TRIP ID	A81025C
DATE LANDED mm/yy	01 / 01
PAGE #	1 OF 2

PSID#	SPECIES NAME	SEX 0=U 1=M 2=F	MARINE MAMMAL MEASUREMENTS					CETACEANS ONLY			NUMBER OF SAMPLES TAKEN								
			Body Temp °F	Blubber Thickness cm	Total Length cm	Axillary Girth cm	Hind/Pec Flip Len cm	Pec Flip Width cm	Dorsal Fin Height cm	Fluke Width cm	Whole	Flipper/Skin	Jaw	Stom	Blub	Musc	Repro Tract	Head/Skull	Other list in comments
01	Harbor Porpoise	2	87.6	3.5	123	84	19	8	10	30	1	1	0	0	0	0	0	0	0
04	Harbor Seal	1	46.7	2.1	111	77	27	---	---	---	0	0	1	1	1	1	0	0	0
05	Bottlenose Dolphin	2	75.8	2.6	202	116	32	16	19	50	0	1	1	1	1	1	1	0	3

General Comments:

PSID05- Other samples = fetus, heart, and liver

BOTTLENOSE DOLPHIN

PSID # 05
A. Snout-eye (cm) 30
B. Snout-ear (cm) 34
C. Snout-blow (cm) 32
D. Snout-flip (cm) 48

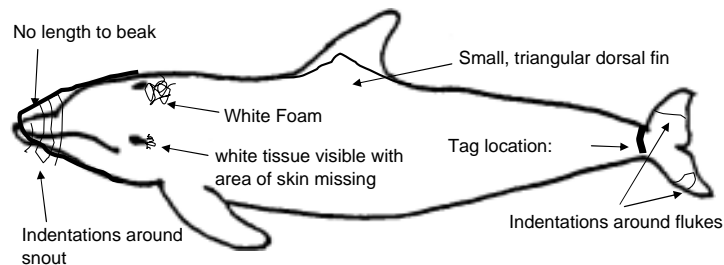
BOTTLENOSE DOLPHIN

PSID # _____
A. Snout-eye (cm) _____
B. Snout-ear (cm) _____
C. Snout-blow (cm) _____
D. Snout-flip (cm) _____

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc.

PSID# 01

Indents around tip of snout & flukes not thru skin- linear, < .2mm in width. White foam coming from blowhole. Skin firm like unripe banana, blubber creamy white, muscle deep maroon color & like meat @ grocery; skin behind L eye missing w/blubber visible= 1in wide x 1/4in deep -blood trickle approx. = 1tsp. volume



Circle one: (Left) / Right



Circle one: Dorsal / Ventral

OBS/TRIP ID	A81025C		
DATE LANDED mm/yy	01	/	01
PAGE #	2	OF	2

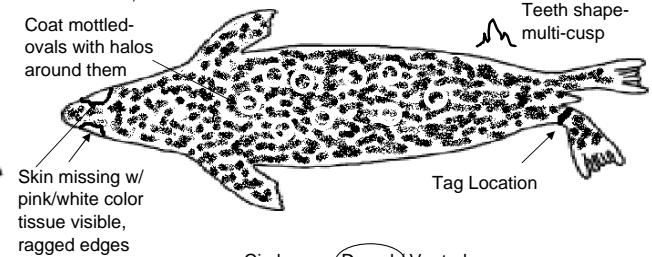
Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # 04

L eye cloudy/milky white; Damaged tissue around eyes (4cm in diam) eyeballs still present; not actively bleeding anywhere on body.
Linear marks around head/ neck area and underneath chest around L pectoral flipper



Circle one: Left / Right



Circle one: Dorsal / Ventral

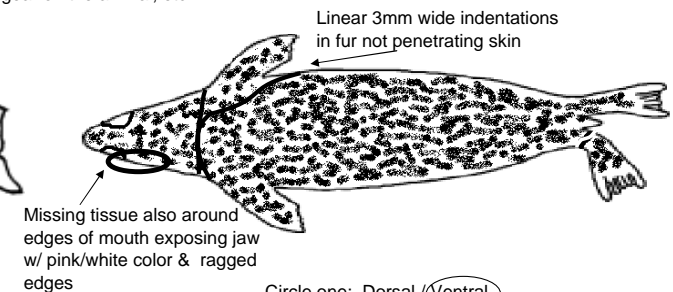
Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # 04

Skin tissue around R jaw missing and exposing pink/white undertissue with ragged edges= 8cm x 4cm x 1 cm depth; bone not visible



Circle one: Left / Right

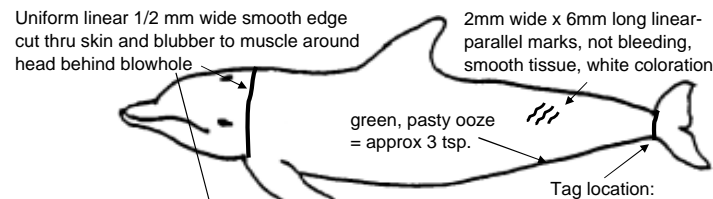


Circle one: Dorsal / Ventral

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # 05

Cut around entire head behind blowhole; 3 linear marks on L peduncle; no other visible damage or wounds on L side of body; green pasty substance oozing from anal slit



Circle one: Left / Right

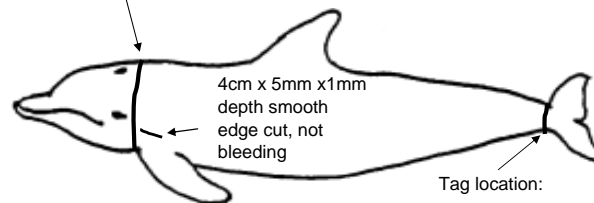


Circle one: Dorsal / Ventral

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # 05

Skin taut, firm and smooth like fresh eggplant; no discharge from blowhole; eyes intact but cloudy/milky white; gums light pink coloration; when cut for blubber sample blood was bright red & muscle warm; no missing or worn teeth-all conical w/ sharp points; cut over L pec flipper



Circle one: Left / Right



Circle one: Dorsal / Ventral

PRECAUTIONS WHEN HANDLING MARINE MAMMALS:

Marine mammals can carry microbes which may cause illness in humans and other animals.

Safety measures to prevent illness and infections

- Use common sense!
- Wear gloves and other protective gear when handling animal and specimens.
- Wash hands and areas of contact thoroughly after contact.
- Clean/wash gear thoroughly after each use.
- Report any animal bite, scratch, or other significant exposure to marine animal blood, saliva, or excretions.
- Tell your physician that you work with marine animals

MARINE MAMMAL SAMPLE PRIORITIES:

Minimum sampling requirements should always be collected. Whole animals should be collected whenever possible. If whole animal cannot be retained, collect head/jaw.

Sample priorities after collection of above tissue when additional sampling is feasible should be:

stomach	fetus
blubber	kidney
muscle	heart
liver	

MARINE MAMMAL MINIMUM SAMPLING PROTOCOLS

MINIMUM REQUIREMENTS

Live animals: Photograph and return to the water.

- Dead animals:
- 1 DNA sample
 - 2 Tag
 - 3 Identify, noting immediate observable characteristics
 - 4 Photograph
 - 5 Body Measurements:
7 for cetaceans (bottlenose = 11), 4 for pinnipeds
 - 6 Body Temperature
 - 7 Sex Determination
 - 8 Describe any new and/or healed wounds



Figure 30. Marine mammal carcass tag

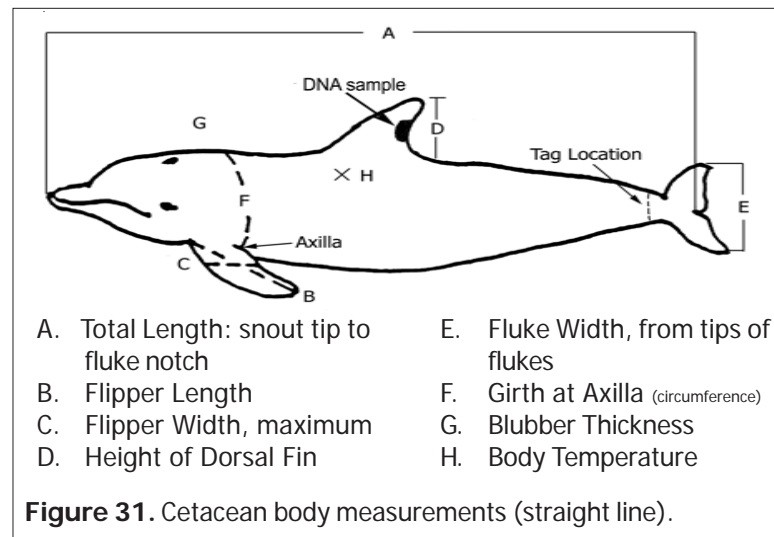


Figure 31. Cetacean body measurements (straight line).

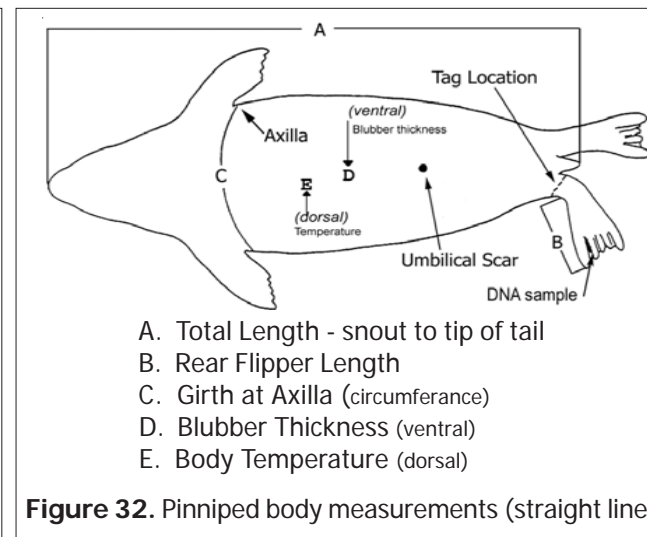
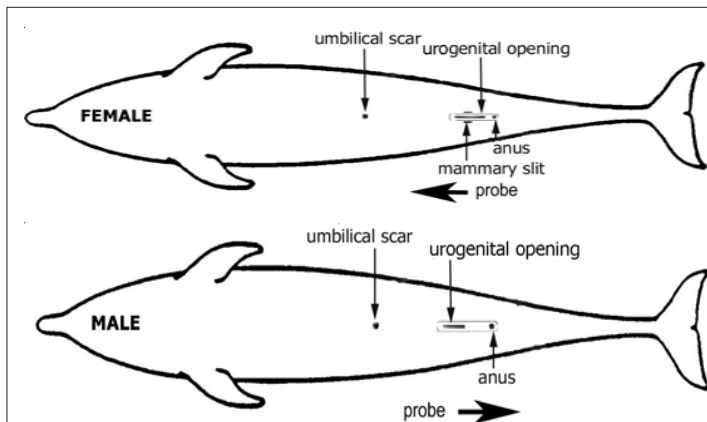


Figure 32. Pinniped body measurements (straight line).

MARINE MAMMAL MINIMUM SAMPLING: sex determination



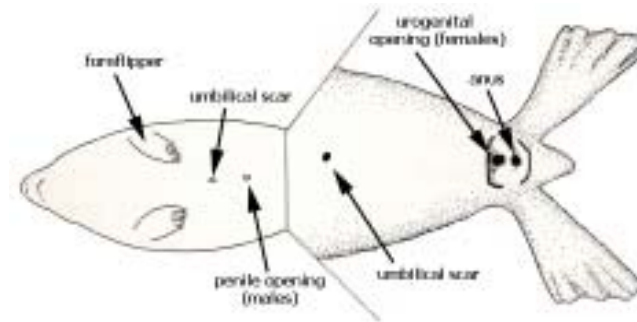
Dead Cetaceans:

Probe the urogenital opening: female = direction of the opening will be forward; males = direction of the opening will be toward the back (fluke).

Live Cetaceans:

Presence of mammary slits on both sides of the urogenital = females; lack of mammary slits is not indicative of males, as females may be immature and not yet show mammary slits. Females - urogenital opening close to anus (almost one opening); Male - urogenital opening separated from anal opening (two distinct openings).

Figure 33. External sex characteristics of cetaceans.



Pinnipeds (live or dead):

Examine the urogenital opening by stretching the rear flippers taut and very wide apart at the base of the tail, looking inside the outer opening: females = two distinct inner openings (anal opening and vaginal opening); males = only an anal opening.

Penile opening in males is along the ventral midline between the umbilical scar and the anus. Mammary teats (two) are posterior to the umbilical scar in females. However, it is often very difficult, to locate either the penile opening or the teats on a pinniped.

Figure 34. External sex characteristics of pinnipeds.

MARINE MAMMAL ADDITIONAL SAMPLING PROTOCOLS

Marine Mammal Additional Sampling Protocols

Below are additional marine mammal measurements for **Bottlenose dolphins only** (Figure 36). Photographs of the profile of the **dorsal fin** from **both sides** should be taken (Figure 35). Be sure to fill out separate tags for each sample collected (Figure 37).



Figure 35. Profile of Bottlenose dolphin dorsal fin from both sides.

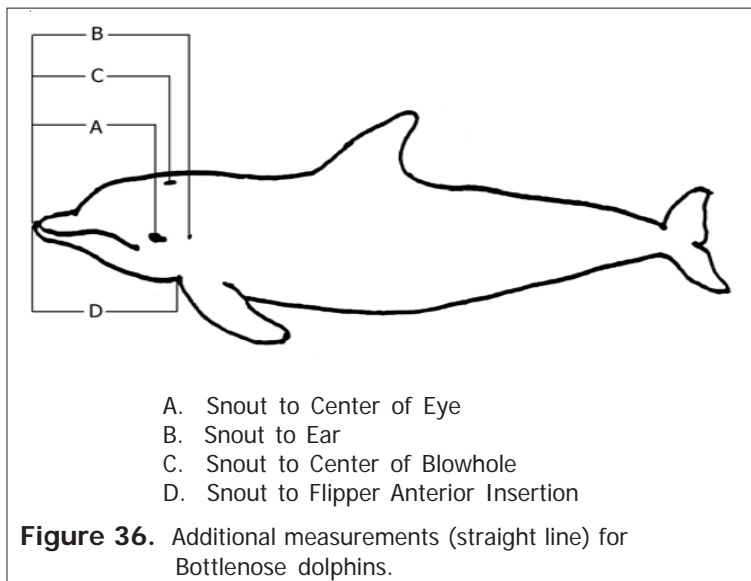


Figure 36. Additional measurements (straight line) for Bottlenose dolphins.

NMFS FISHERIES OBSERVER PROGRAM			
Obs/Trip ID	Z90001-		Haul # 6
Tag	02/9/11	POB 02	Date 1/1/00
Species	Harbor seal		Stat Area 513
Fishery	050	Length	130cm
SAMPLE TYPE: BLUBBER <input type="checkbox"/> JAW <input checked="" type="checkbox"/> REF. ORGAN <input type="checkbox"/> FETUS <input type="checkbox"/> KIDNEY <input type="checkbox"/> STOMACH <input type="checkbox"/> HEAD <input type="checkbox"/> LIVER <input type="checkbox"/> VERTebra <input type="checkbox"/> HEART <input type="checkbox"/> MUSCLE <input type="checkbox"/> WHOLE <input type="checkbox"/> OTHER _____ DNA <input type="checkbox"/> FINCLIP <input type="checkbox"/> FLIPPER <input type="checkbox"/> BIOPSY <input type="checkbox"/> SKIN <input type="checkbox"/>			

Figure 37. Properly filled out white Tyvek sample tag.

MARINE MAMMAL ADDITIONAL SAMPLING: internal anatomy

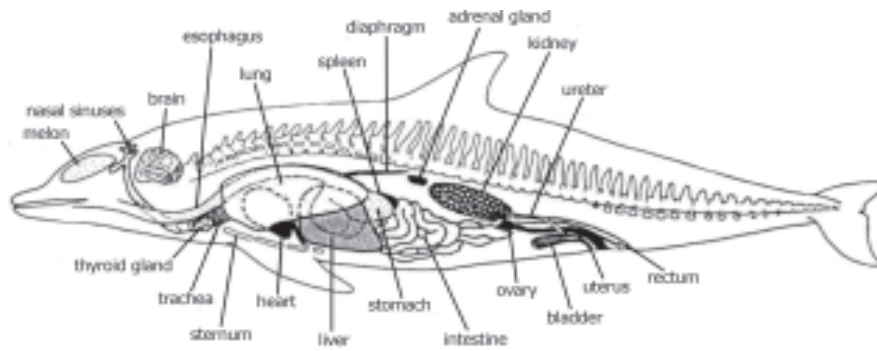


Figure 38. Internal anatomy of cetaceans.

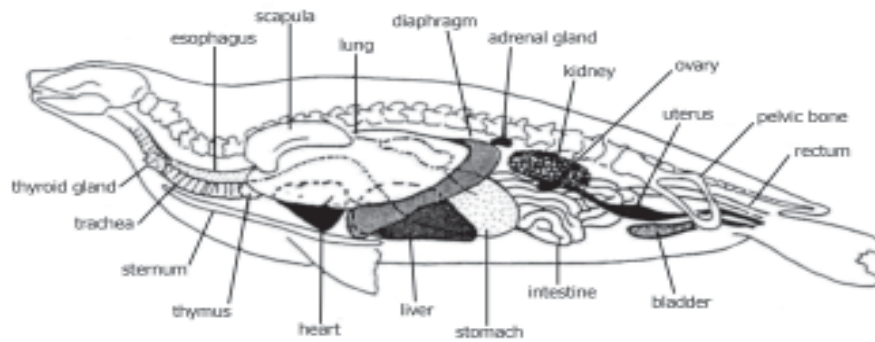


Figure 39. Internal anatomy of pinnipeds.

MARINE MAMMAL BIOLOGICAL SAMPLE LOG
NMFS FISHERIES OBSERVER PROGRAM
OBBMM 01/01/10

OBS/TRIP ID	
DATE LANDED mm/yy	/
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>

PSID#	SPECIES NAME	SEX 0=U 1=M 2=F	MARINE MAMMAL MEASUREMENTS					CETACEANS ONLY			NUMBER OF SAMPLES TAKEN								
			Body Temp °F	Blubber Thickness cm	Total Length cm	Axillary Girth cm	Hind/Pec Flip Len cm	Pec Flip Width cm	Dorsal Fin Height cm	Fluke Width cm	Whole	Finclip/ Flipper/ Skin	Jaw	Stom	Blub	Musc	Repro Tract	Head/ Skull	Other list in comments
			.	.															
			.	.															
			.	.															
			.	.															
			.	.															

General Comments:

BOTTLENOSE DOLPHIN
 PSID # _____
 A. Snout-eye (cm) _____
 B. Snout-ear (cm) _____
 C. Snout-blow (cm) _____
 D. Snout-flip (cm) _____

BOTTLENOSE DOLPHIN
 PSID # _____
 A. Snout-eye (cm) _____
 B. Snout-ear (cm) _____
 C. Snout-blow (cm) _____
 D. Snout-flip (cm) _____

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc.

PSID# _____



Circle one: Left / Right



Circle one: Dorsal / Ventral

OBS/TRIP ID	
DATE LANDED mm/yy	/
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # _____



Circle one: Left / Right



Circle one: Dorsal / Ventral

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # _____



Circle one: Left / Right



Circle one: Dorsal / Ventral

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # _____



Circle one: Left / Right



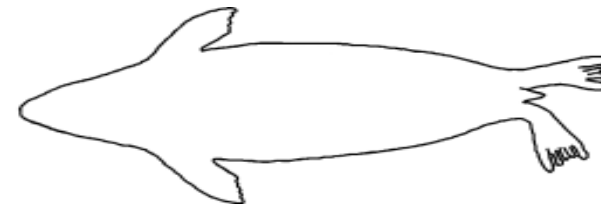
Circle one: Dorsal / Ventral

Sketch and describe ID characteristics, overall body condition, note any scavenger damage and/or decomposition, new and/or healed wounds, any gear on the animal, etc:

PSID # _____



Circle one: Left / Right



Circle one: Dorsal / Ventral



SOUTHEAST FISHERIES SCIENCE CENTER SEA TURTLE OBSERVER MANUAL

By
Lisa C. Belskis
Sheryan P. Epperly
Lesley W. Stokes



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, Florida 33149

June 2009 document

Updated January 2013

Cover Photo: Measuring curved carapace length (NMFS/SEFSC photo).



SOUTHEAST FISHERIES SCIENCE CENTER SEA TURTLE OBSERVER MANUAL

By
Lisa C. Belskis
Sheryan P. Epperly
Lesley W. Stokes

National Marine Fisheries Service
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, Florida 33149

U.S. DEPARTMENT OF COMMERCE
Gary Locke, Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Jane Lubchenco, Under Secretary for Oceans and Atmosphere

NATIONAL MARINE FISHERIES SERVICE
James W. Balsiger, Acting Assistant Administrator for Fisheries

June 2009 document

Updated January 2013

This Technical Memorandum series is used for documentation and timely communication of preliminary results, interim reports, or similar special-purpose information. Although the memoranda are not subject to complete formal review, editorial control, or detailed editing, they are expected to reflect sound professional work.

NOTICE

The NOAA Fisheries (NMFS) does not approve, recommend or endorse any proprietary product or material mentioned in this publication. No reference shall be made to NOAA Fisheries, or to this publication furnished by NOAA Fisheries, in any advertising or sales promotion which would indicate or imply that NOAA Fisheries approves, recommends or endorses any proprietary product or material herein or which has as its purpose any intent to cause or indirectly cause the advertised product to be used or purchased because of NOAA Fisheries publication.

This report should be cited as follows:

Belskis, L.C., S.P. Epperly, and L.W. Stokes. 2009 (updated Jan 2013). Southeast Fisheries Science Center Sea Turtle Observer Manual. NOAA Technical Memorandum NMFS-SEFSC-589, 30 pp.

Copies may be obtained by writing:

National Marine Fisheries Service
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, Florida 33149

Or

National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161
(703) 605-6000, (800) 553-6847

PDF version available at <http://www.sefsc.noaa.gov/seaturtletechmemos.jsp>.
Updates will be provided periodically at this location.

Minor revisions were made to this document in early February 2010. The revisions were to clarify the response to condition evaluation for turtles not coded “alive”. The original document stated to mark each line with a check mark to indicate a positive reflex/responsiveness and a ‘0’ for no response. This updated document asks for a ‘Y’ for positive response and an ‘N’ for no response. Language was also added to further describe ‘alive’, unresponsive and comatose relative to the reflex tests being conducted to better suit the needs of the observer.

These minor changes only affect pages 3 (Figure 1b), 6 and 16.

Minor revisions were made to this document in November 2010. The revisions were to better document the scenario where a turtle encounters the gear but does not get entangled nor hooked (“holding the bait”). The second update was to allow for experimental fishing (eg. hook timer or “weak hook” study) to be designated on the form and subsequently in the database.

These minor changes only affect pages 2 (Figure 1a), 4 and 8.

Additional minor revisions were made to this document in February 2012. These latest revisions add the field ‘Target Catch’ where the observer will indicate the target catch for the trip where a sea turtle was captured. Minor rewording occurs for the question ‘Was hook removed from this animal?’ which now reads ‘Was hook recovered from this animal?’. The intent of the question is the same although it was pointed out that ‘removed’ is a physical action when for this question we are interested in whether or not the hook was retrieved/recovered. Lastly the spaces for where the PIT tag number is written was extended to 15 spaces as newly available ISO standard tags now have 15 digits.

These minor changes only affect pages 2 (Figure 1a and b), 4, 10 and 14.

Additional minor revisions were made to this document in January 2013. These latest revisions were to clarify intent of two fields. The first, attempted resuscitation was broken into two questions to learn if both aspects of resuscitation (hindquarter elevation and rocking) were conducted. The second, regarding light sticks, was reworded from Was light stick on hook? to Is a light stick on hook? The rewording clarifies we are interested in if a lightstick is on the hook at haul back and not whether the hook was deployed with a lightstick.

These minor changes only affect pages 2 (Figure 1a), 7, 8.

Table of Contents

SEFSC Sea Turtle Observer Manual

Introduction	p.1
General Instructions	p.4
Capture Information	p.4
Identification	p.5
Condition of Turtle	p.6
Hook and Line Gear	p.7
All Gear Entanglement and Removal	p.10
Biological Information	p.10
Dimensions	p.10
Tags	p.13
Biopsy Samples	p.14
Release Information	p.15
Final Disposition	p.15
Additional Comments	p.16
Identification Criteria	p.17
Vessel Captain, Crew and Observer Responsibilities	p.18
Specimen Collection Requirements	p.19
Materials for Collecting Genetic Tissue Samples	p. 20
Instructions for USFWS Form 3-177 (Declaration of Importation or Exportation of Fish and Wildlife).....	p. 21
APPENDIX- Hook Locations.....	p. 23
References.....	p. 30

Acknowledgements

This manual has evolved through several versions. Program coordinators, fishery observers and biologists have assisted in adapting this document for use in multiple fisheries. We sincerely thank the contributors of this and earlier versions: Myrto Argyropoulou, Larry Beerkircher, Carrie Horton, and Dennis Lee. We thank Jeanette Wyneken for her assistance distinguishing internal hooking locations. For their help in defining criteria for the condition of comatose and discussions leading to a standardized evaluation for turtles not coded as “alive” we thank Craig Harms, Joseph Flanagan, Charlie Innis, Tom Jackson, Elliot Jacobson, Molly Lutcavage, Paul Richards, Thierry Work, and Jeanette Wyneken. For the use of the olive ridley carapace and plastron diagrams, Figure 2, we thank Henri A. Reichart and Stanny Handigman.

SEFSC SEA TURTLE OBSERVER MANUAL

INTRODUCTION

The Sea Turtle Life History Form, version 01/2013 (Figure 1), is used to record biological data, including the number, species, size and condition of sea turtles incidentally captured in a fishery. Other data collected, such as tagging information and biopsy samples, may provide information regarding the movements and preferred habitats of the various populations of sea turtles. These data collected by observers and fishery biologists are critical to the development of conservation and recovery strategies for these marine reptiles. This document provides instruction to complete the Sea Turtle Life History Form, as well as a reference for conducting the permitted activities according to SEFSC approved protocols. Since this document originated as a training manual for NMFS fishery observers, much of the language is directed to observers, although the manual can also be used by NMFS fishery biologists conducting research in which turtles could be incidentally encountered.

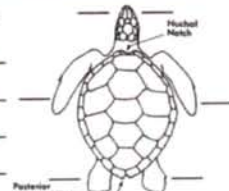
Two supplementary documents providing valuable reference resources can be accessed at: <http://www.sefsc.noaa.gov/seaturtletechmemos.jsp>. The Sea Turtle Research Techniques Manual, NOAA Technical Memorandum NMFS-SEFSC-579, provides comprehensive training on topics including species identification, handling, resuscitation, oral cavity anatomy, morphometrics, marking, electronic tags, and biopsy sampling. NMFS/SEFSC researchers and fishery observers must follow these protocols to ensure compliance with permit requirements. The Careful Release Protocols for Sea Turtle Release with Minimal Injury, NOAA Technical Memorandum NMFS-SEFSC-580, describes the equipment and techniques for removing fishing gear from incidentally captured turtles and provides guidance for when hook removal should be attempted.

The Endangered Species Act of 1973 prohibits harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing or collecting any listed threatened or endangered species. Authorization to “take” (defined as any of the actions listed in the previous sentence) a listed threatened or endangered species must be granted under the provisions of the ESA. Only authorized personnel may conduct the procedures described in this manual while working with listed threatened or endangered sea turtles. When conducting research, authorized personnel must carry all relevant permits and authorization letters and follow all terms and conditions, including reporting requirements, as outlined in the permit(s). The activities described here are conducted under the authority of these NMFS Permit Numbers: 1552 (Observer Programs), 1570 (Gear Research), or 1571 (Resource Assessment Cruises). Additional tasks covered under the authority of NMFS Permit No. 1551 (Directed Research), such as attaching satellite tags, oxytetracycline marking, detailed data collection or blood collection, may be requested in the future and are described in NOAA Technical Memorandum NMFS-SEFSC-579. Biopsy samples or salvaged parts/carcasses are imported from the high seas under the authority of USFWS CITES 09US045532/9.

Figure 1a. Sea Turtle Life History Form, version 01/2013.

SEA TURTLE LIFE HISTORY FORM					
01/2013					
CAPTURE INFORMATION					
TRIP <input type="text"/>	YEAR 20 <input type="text"/>	MONTH <input type="text"/>	DAY <input type="text"/>		
SET/HAUL/TOW <input type="text"/>	SPECIMEN NUMBER BY TRIP <input type="text"/>	EXPERIMENTAL Y / N? (if Y, note project name in comments)			
GEAR TYPE: <input type="checkbox"/> Longline <input type="checkbox"/> Gill Net <input type="checkbox"/> Trawl	(note time in comments)				
GEAR DEPTH: <input type="checkbox"/> Surface <input type="checkbox"/> Midwater <input type="checkbox"/> Bottom <input type="checkbox"/> Other <input type="text"/>					
TARGET CATCH: <input type="text"/>	TIME (24 hr) <input type="text"/>	WATER TEMP (°F) <input type="text"/>			
LATITUDE <input type="text"/> deg <input type="text"/> min N / S	LONGITUDE <input type="text"/> deg <input type="text"/> min E / W				
Did turtle slide out/escape from gear? Y / N	Was turtle brought on board? Y / N				
IDENTIFICATION (see back)					
SPECIES: <input type="checkbox"/> Leatherback <input type="checkbox"/> Loggerhead <input type="checkbox"/> Kemp's ridley <input type="checkbox"/> Green <input type="checkbox"/> Hawksbill <input type="checkbox"/> Olive ridley		Number of Photos Taken? <input type="text"/>			
<input type="checkbox"/> Unidentified Hardshell <input type="checkbox"/> Unknown					
CONDITION OF TURTLE AT CAPTURE <input type="checkbox"/> Injured <input type="checkbox"/> Uninjured <input type="checkbox"/> Unknown					
(Please check injury status above as well as condition below; complete condition evaluation on p. 2 for any not coded "alive")					
<input type="checkbox"/> Previously dead	<input type="checkbox"/> Fresh dead/comatose/unresponsive	<u>Attempted resuscitation:</u> Hindquarters Elevated? Y / N			
<input type="checkbox"/> Alive	<input type="checkbox"/> Unknown (describe) <input type="text"/>	<input type="checkbox"/> Other (describe) <input type="text"/>	Rocked? Y / N		
IF GEAR IS A FORM OF HOOK AND LINE, COMPLETE THIS SECTION, AS APPLICABLE:					
HOOK TYPE <input type="checkbox"/> "J" <input type="checkbox"/> Circle <input type="checkbox"/> other (describe) <input type="text"/>		SIZE <input type="text"/> / 0			
MANUFACTURER/STYLE NO. <input type="text"/>		DEGREE OFFSET <input type="text"/> °			
BAIT <input type="checkbox"/> Squid <input type="checkbox"/> Mackerel <input type="checkbox"/> Sardine <input type="checkbox"/> Unknown <input type="checkbox"/> Other (describe) <input type="text"/>		SIZE <input type="text"/>			
Caught on hook timer? Y / N		If yes, fill in time elapsed <input type="text"/>			
Is a light stick on hook? Y / N / U / Not Applicable		If No, number of gangions to next light stick <input type="text"/>			
Light stick type (circle): Chemical / LED					
Light stick color (circle)? White, Pink, Blue, Green, Black, Red, Yellow, Purple, Other, Unknown					
Number of gangions to next float <input type="text"/>					
HOOK LOCATION (See Appendix in manual for descriptive figures)					
(circle specific location; check box if specifics are not known; annotate drawing on reverse to indicate location as needed):					
<input type="checkbox"/> Not Hooked <input type="checkbox"/> Not Known if Hooked <input type="checkbox"/> Hooked, but location totally Unknown <input type="checkbox"/> Holding bait/hook					
Internal: <input type="checkbox"/> Unknown, internal					
<input type="checkbox"/> Swallowed (Esophagus) Hook visible? <input type="checkbox"/> Visible to insertion point / <input type="checkbox"/> Partial hook / <input type="checkbox"/> Not visible					
<input type="checkbox"/> Beak/ Mouth (Circle one) Jaw Location (Check one) <input type="checkbox"/> upper <input type="checkbox"/> lower <input type="checkbox"/> side (mouth only)					
Check one for mouth: <input type="checkbox"/> tongue <input type="checkbox"/> glottis <input type="checkbox"/> roof of mouth <input type="checkbox"/> jaw joint <input type="checkbox"/> other (describe)					
External: <input type="checkbox"/> Unknown, external <input type="checkbox"/> Beak/Head/Neck <input type="checkbox"/> Carapace/Plastron					
<input type="checkbox"/> Front Flipper/Shoulder/Armpit <input type="checkbox"/> Rear Flipper/Groin/Tail					
Was hook recovered from this animal? Y / N / Unknown / Not Applicable					
Was animal entangled in gear? At capture? Y / N / Unknown At Release? Y / N / Unknown					
How much gear (linear feet) was left on turtle when released? <input type="text"/> ft. (estimated/measured)					

Figure 1b. Sea Turtle Life History Form, version 01/2013 continued.

BIOLOGICAL INFORMATION																																		
Estimated carapace length (notch-to-tip straight line): <input type="text"/> <input type="text"/> <input type="text"/> ft (needed only if turtle is not boated & measured)																																		
<div style="display: flex; justify-content: space-between;"> <div> <u>DIMENSIONS (cm)</u> Curved (measuring tape) Standard Measurements Carapace Length <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> notch-to-tip Carapace Width <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> </div> <div> Straight Line (calipers) Standard Measurements <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> notch-to-tip <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> </div> <div> Straight Line (calipers) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> notch-to-notch </div> </div>																																		
<u>TAGS</u> (identify address on each tag in the comments section) <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Flipper Tag Number</th> <th style="width: 10%;">Metal (1) or Plastic (2)</th> <th style="width: 20%;">Position (Flipper) LF, RF, LR, RR</th> <th style="width: 20%;">Already Present (1) or Applied by Observer (2)</th> <th style="width: 25%;">Were Tags Removed?</th> </tr> </thead> <tbody> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td>Y / N</td> </tr> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td>Y / N</td> </tr> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td>Y / N</td> </tr> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td>Y / N</td> </tr> </tbody> </table>										Flipper Tag Number	Metal (1) or Plastic (2)	Position (Flipper) LF, RF, LR, RR	Already Present (1) or Applied by Observer (2)	Were Tags Removed?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Y / N	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Y / N	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Y / N	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Y / N
Flipper Tag Number	Metal (1) or Plastic (2)	Position (Flipper) LF, RF, LR, RR	Already Present (1) or Applied by Observer (2)	Were Tags Removed?																														
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Y / N																														
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Y / N																														
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Y / N																														
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Y / N																														
PIT Tag <input type="text"/> Position (Flipper) <input type="text"/> Scanned? Y / N Living Tag (describe) <input type="text"/> Other Tags (describe) <input type="text"/>																																		
(Put PIT tag label here) If you have the option of Decimal or Hexidecimal sequence, choose <u>DECIMAL</u>																																		
<u>BIOPSY SAMPLES TAKEN?</u> Y (itemize below) / N / Unsuccessful																																		
<u>RELEASE INFORMATION</u> LATITUDE <input type="text"/> <input type="text"/> deg <input type="text"/> <input type="text"/> min N / S LONGITUDE <input type="text"/> <input type="text"/> deg <input type="text"/> <input type="text"/> min E / W TIME (24 hr) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> WATER TEMP (°F) <input type="text"/> <input type="text"/> <input type="text"/> DATE, if different from capture: YEAR 20 <input type="text"/> <input type="text"/> MONTH <input type="text"/> <input type="text"/> DAY <input type="text"/> <input type="text"/>																																		
<u>FINAL DISPOSITION</u> <input type="checkbox"/> Discarded Dead/Comatose/Unresponsive Carcass Marked? Y / N <input type="checkbox"/> Salvaged Carcass/Parts <input type="checkbox"/> Released Alive <input type="checkbox"/> Taken to Holding Facility <input type="checkbox"/> Unknown (explain)																																		
<u>ADDITIONAL COMMENTS</u> (list all biological samples collected; describe/sketch anomalies): <div style="border: 1px solid black; height: 100px; width: 100%;"></div>																																		
																																		
<div style="display: flex; justify-content: space-between;"> <div> <u>IDENTIFICATION CRITERIA</u> <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 30%;">Number of:</td> <td style="width: 10%;"><input type="checkbox"/></td> <td style="width: 30%;">Overlapping Scutes?</td> <td style="width: 30%;">Y / N / U</td> </tr> <tr> <td>Left Lateral Scutes</td> <td><input type="checkbox"/></td> <td>Inframarginal Pores?</td> <td>Y / N / U</td> </tr> <tr> <td>Right Lateral Scutes</td> <td><input type="checkbox"/></td> <td>1 Pair Prefrontal Scales?</td> <td>Y / N / U</td> </tr> <tr> <td>Vertebral Scutes</td> <td><input type="checkbox"/></td> <td>Lacks Bony Shell?</td> <td>Y / N</td> </tr> <tr> <td>L. Inframarginal Scutes</td> <td><input type="checkbox"/></td> <td>Does Nuchal Scute Touch 1st Lateral Scute?</td> <td>Y / N / U</td> </tr> <tr> <td>R. Inframarginal Scutes</td> <td><input type="checkbox"/></td> <td></td> <td></td> </tr> </tbody> </table> </div> <div> <u>CONDITION EVALUATION FOR TURTLES NOT CODED "ALIVE"</u> Mark each line on diagram above with a 'Y' to indicate positive reflex/response, and 'N' for no response. Rigor Mortis Y / N / U Rotting Flesh Y / N / U Foul Smell Y / N / U </div> </div>										Number of:	<input type="checkbox"/>	Overlapping Scutes?	Y / N / U	Left Lateral Scutes	<input type="checkbox"/>	Inframarginal Pores?	Y / N / U	Right Lateral Scutes	<input type="checkbox"/>	1 Pair Prefrontal Scales?	Y / N / U	Vertebral Scutes	<input type="checkbox"/>	Lacks Bony Shell?	Y / N	L. Inframarginal Scutes	<input type="checkbox"/>	Does Nuchal Scute Touch 1 st Lateral Scute?	Y / N / U	R. Inframarginal Scutes	<input type="checkbox"/>			
Number of:	<input type="checkbox"/>	Overlapping Scutes?	Y / N / U																															
Left Lateral Scutes	<input type="checkbox"/>	Inframarginal Pores?	Y / N / U																															
Right Lateral Scutes	<input type="checkbox"/>	1 Pair Prefrontal Scales?	Y / N / U																															
Vertebral Scutes	<input type="checkbox"/>	Lacks Bony Shell?	Y / N																															
L. Inframarginal Scutes	<input type="checkbox"/>	Does Nuchal Scute Touch 1 st Lateral Scute?	Y / N / U																															
R. Inframarginal Scutes	<input type="checkbox"/>																																	
Dorsal Coloration <input type="checkbox"/> Black <input type="checkbox"/> Orange/Red-Brown <input type="checkbox"/> Brown <input type="checkbox"/> Gray-Green <input type="checkbox"/> Other <input type="text"/>																																		

GENERAL INSTRUCTIONS

Complete one Sea Turtle Life History Form for each turtle brought aboard or released alongside the vessel. Try to photograph all turtles, including those hooked or entangled sea turtles that are not brought aboard due to their large size or for safety reasons. These photographs will be used to confirm species identification and document the gear interaction. Record tag data if tags are present and take biological samples if requested. Note that the amount of writing required when completing the Form has been minimized by offering options to circle the answer or to check a box, although some boxes require a written response.

Handle turtles in accordance with Chapter 2 of the Sea Turtle Research Techniques Manual. Turtles should be processed and returned to the water as soon as possible unless they have been resuscitated. Observers may need to put the turtle safely aside and process it later in order to continue other observer duties. However, if the animal has gear attached, the gear should be removed immediately by the vessel crew at their discretion, as the severity of the injury can increase with prolonged exposure.

CAPTURE INFORMATION

Trip Number: Record the unique number assigned by the Observer Program Coordinator or project's Principal Investigator.

Year, Month, Day: Record the year, month, and day the animal was captured.

Set / Haul / Tow: Record the set, haul, or tow number of the trip.

Specimen Number: Record a three digit consecutive number. The turtle specimen number on each trip begins with 001 and continues sequentially. Turtle specimen numbers are kept separate from all other specimen numbers for other species groups.

Experimental Y / N? If the trip is experimental (hook timer or "weak hook" study, etc.), then please circle Y and then write the project name in the comments. Circle N for normal fishing operations.

Gear Type: Specify which gear is being fished. If the gear type is Gill Net or Trawl, please write in the specific type and note the soak or tow time. If the gear is not listed, write in the gear type.

Gear Depth: Specify whether the gear was being fished at the surface, midwater, or on the bottom. If gear depth is something other than the listed depths, select other (describe).

Target Catch: Record the primary target catch of this trip (e.g., tuna, swordfish, shark). For shrimp trawls indicate *penaeid* (brown, pink, white, ect) or rock shrimp. If it is a mixed target trip, indicate mixed and describe. Be as specific as possible (eg., to species, if known).

Time: Record the time of day (24 hr clock) when the turtle was brought alongside the vessel. If your project uses a different time system than local 24 hr military time, such as GMT or military time in hundredths of an hour, please note this beside the time so that it can be converted.

Water Temperature: Record the water temperature at the location where the turtle was brought alongside the vessel.

Latitude: Record the degrees and minutes of latitude at the time of the actual recovery of the animal. Circle N or S for north or south of the equator.

Longitude: Record the degrees and minutes of longitude at the time of the actual recovery of the animal. Circle E or W for east or west of the prime meridian.

Did turtle slide out/escape from gear? Circle Y for Yes or N for No. If the turtle had to be cut loose from the gear, then the correct answer is No.

Was turtle brought on board? Circle Y for Yes or N for No.

Identification (see Chapter 1 of the Sea Turtle Research Techniques Manual)

Species: Check the appropriate box that corresponds to the species of the captured turtle. If you are unable to identify the species with certainty, try to take photographs as described below and record the species on the data sheet as “unknown”. With experience, sea turtles seen close-up generally become easier to identify. See back of data sheet for identification criteria and Chapter 1 for more information.

Number of Photos Taken? Photograph every turtle, and record the number of photos taken. There are two purposes of the photographs: (1) confirm species identification and (2) document the gear interaction. These pictures will assist in understanding how the turtle interacted with the gear for post hooking mortality assessments and provide information for reducing the interactions in the future. For easily identified turtles, take one picture to confirm identification. For those with questionable identification, take at least 3 pictures showing dorsal, ventral, and frontal views. In addition to the identification photographs, take a photo showing the gear interaction. Try to photograph the top of the head of leatherbacks to record the “pink spot” and white markings for photo-id.

For the first picture of every turtle, distinguish each new specimen from the previous turtle specimen. Suggested examples include a label such as a dive slate with trip # and specimen # or indicate the specimen number by using the appropriate number of fingers in the field of view. The latter is particularly helpful for turtles not brought on board. Note that most disposable cameras need a minimum distance of at least 4 ft from the subject to take clear pictures (depth of field); otherwise the picture will be out of focus.

Condition of Turtle at Capture

Check the appropriate box that best corresponds to the turtle's condition when it was recovered and record specific notes about any injury to the turtle.

Specify the turtle's injury status as **Injured**, **Uninjured**, or **Unknown**, as described below, by checking the appropriate box:

Injured: The turtle is injured. All hooked turtles are injured. Describe in detail how the turtle is hooked on the back of the form. Any fresh lesion constitutes an injury.

Uninjured: The turtle apparently is not injured (e.g., net captures or entangled), and there are no fresh lesions.

Unknown: The observer cannot determine if the turtle is injured. This may happen when an animal is not boated, and the observer did not get a good view of the animal.

Specify the turtle's condition at capture by checking one of the following and by circling the specific category when it can be determined:

Previously Dead "Dead before interaction": The turtle died prior to and not as a result of the observed fishing interaction.

Note: A **previously dead** turtle will usually have rotting tissue around the eyes and vents, and it may be bloated and foul smelling. It also may have sloughing scutes and scales. However, it may not smell, but may have rigor mortis.

Fresh dead/comatose/unresponsive: At times it is difficult to make the distinction whether a turtle is dead, comatose or unresponsive, particularly in the field with a lack of specialized monitoring equipment. When encountering a turtle that appears unresponsive, test the turtle's response to stimuli and detail findings on the diagram near the comments section on the form. To test eye reflexes, check for a blink response by gently touching the corner of the eye or eyelid. Pinch both front and rear flippers and the tail to check for response. See Condition Evaluation for Turtles Not Coded "Alive" on page 16 and fill in every blank (using a 'Y' for positive response, and 'N' for no response) on the turtle diagram on the back of the data sheet. A lack of bilateral response (reflexes on both sides) for any of these tests may indicate the need for resuscitation. A fully conscious (coded as 'alive') turtle has all bilateral reflexes and has a central (e.g., brain) recognition of the stimulus. An unresponsive turtle will not have full bilateral responses (some but not all lines around diagram will have 'Y' marked). A comatose turtle will have lost all reflexes (all of the lines around diagram will have 'N' marked). This category includes the following scenarios:

Fresh Dead “Dead because of interaction”: The turtle died as a result of the current (observed) fishing operation. The carcass may show signs that it had been alive during the interaction (e.g., multiple wrap entanglement in line or netting, or internal hooking). The carcass may or may not have rigor mortis and may begin to smell. Extended soak times, over several days, may influence the condition, and the carcass may be moderately to severely decomposed when retrieved. Selecting this field indicates that the turtle was assuredly alive when captured in the gear, regardless of the time elapsed before being observed.

Comatose/Unresponsive: Select this category if the turtle is comatose/unresponsive and if there is any indication of life but not obvious directed movements or breaths.

Attempted resuscitation: Hindquarters Elevated? Rocked? Circle Y for Yes or N for No to indicate whether the vessel crew elevated the hindquarters and rocked a fresh dead/comatose/unresponsive turtle. Sea Turtle Resuscitation Guidelines are described in the Federal Register (66 FR 67495, December 31, 2001). The turtle’s hindquarters must be elevated at least six inches (15 – 30 degrees) for a period of 4 up to 24 hours, while the turtle is kept moist and in the shade at a temperature similar to water temperature at capture. Periodically, rock the turtle gently left to right and right to left by holding the outer edge of the carapace and lifting one side about 3 inches, then alternate to the other side. See further resuscitation instructions in Chapter 3 of the Sea Turtle Research Techniques Manual. Note in the comments section the time it took for the turtle to respond and how long the turtle was kept on deck before release. If elevation of hindquarters or rocking side to side was not attempted, please describe the circumstances in the comments section.

Alive: The turtle is alive if it makes directed movements, such as attempting to crawl or bite, and while breathing the carapace raises and lowers. The turtle may be injured, uninjured or unknown as previously described.

Unknown (describe): The turtle was not closely observed, and the condition is unknown. Explain in the comments section on back of form.

Other (describe): The condition does not fit any category described above. Explain in the comments section on back of form.

If gear is a form of hook and line, complete this section, as applicable:

Hook Type: Check “J” or Circle. If hook type is neither, select Other (describe).

Hook Size: Write in size of hook, (e.g., 9/0, 18/0).

Manufacturer/Style No. Write in the manufacturer and style number (e.g., Mustad #39968D).

Degree Offset: Write in the degree offset of hook (e.g., 0°, 5°, 10°).

Bait: Check Squid, Mackerel, Sardine, Unknown or Other (describe) to specify bait type.

Size: Write in the bait size. *If two baits involved, include both sizes. See examples below.*

Using values recorded on the haul log for each bait kind, first calculate an individual bait weight (box weight/bait number) and round to nearest hundredth of a pound. Then, convert to grams (1 lb = approximately 450 grams) multiplying by 450.

-Squid: 200lbs/400 baits = 0.50 lbs each $0.50 \times 450 = 225$ grams, record as 225 grams

-Mackerel: 300 lbs/ 400 baits = 0.75 lbs each $0.75 \times 450 = 337.5$ grams, record as 338 grams

-Sardines: 60 lbs/400 baits = 0.15 lbs each $0.15 \times 450 = 67.5$ grams, record as 68 grams

Caught on hook timer? Circle Y for Yes or N for No. If Yes, fill in time elapsed in the space provided.

Is a light stick on hook, upon haul back)? Circle Y for Yes, N for No, U for Unknown or Not Applicable. Note in comments if you witness the light stick fall off during haul back.

Gangions to next light stick: If answer above was no, record the number of gangions to the **next** light stick (not necessarily nearest).

Light stick type (circle): Chemical or LED. If applicable, circle Chemical for glow sticks or circle LED for a light-emitting-diode requiring an electric current or battery.

Light stick color (circle): If applicable, circle the color of the light stick or write it in if not listed.

Number of gangions to next float: Record number of gangions to the **next** float (not necessarily nearest).

Hook location (See Appendix)

For hooked turtles, circle the specific location if it can be determined. If specific location cannot be determined, note the general location of the hook by checking the appropriate code box. Describe the hook and its location in the comments section. Note if there is more than one hook involved.

Specify if the animal is **Not Hooked (entanglement only)**, **Not Known if Hooked**, **Hooked, but location totally Unknown**, or **Holding bait/hook** (where there is no evidence of hooking or entanglement, and it appears that the turtle “spit out” the bait or hook) and record details in the comments section. Otherwise follow the directions below for **Internal** or **External** hooks.

Internal Hook Location (check general location and circle the specific location, if known).

Unknown, internal: The animal has been hooked internally, but the specific location cannot be determined. This may be the case when an animal cannot be observed closely.

Swallowed (esophagus): The turtle has “swallowed” the hook. The barb of the hook is lodged in the esophagus, as indicated by the presence of papillae, or the hook may be deeper. Part of the eye or shank may be visible in the open mouth. See description of the oral cavity in Chapter 4 of the Sea Turtle Research Techniques Manual.

Swallowed Hook Visible?: Circle the extent to which the hook is visible, choosing from: **visible to insertion point, partially visible, or not visible.**

Beak/Mouth: The turtle is hooked in the beak internally or the mouth. Circle whether hook is in the **beak** (the hard, keratinized parts of the upper and lower jaw in hardshell turtles) or the **mouth** (soft tissue parts). Hook usually is easily visible, except those lodged in the back of the mouth. Describe hook and location in the comments section. See description of oral cavity in Chapter 4 of the Sea Turtle Research Techniques Manual and Careful Release Protocols for further detail.

Jaw location: Specify the location of the hook in the jaw: **upper, lower, or side** (mouth only) by checking the appropriate box. Check specific location as it applies if hooked in mouth (**tongue, glottis, roof of mouth, or jaw joint**). Check **other**, if the specific locations listed do not apply. Example: If the turtle was hooked in the lower jaw but was not hooked in the tongue or glottis, check the **beak/mouth** box, circle **mouth**, check **lower** jaw and check **other**. Be as specific as possible, use comments section if necessary.

Internal: ☐ **Unknown, internal**
☐ **Swallowed (Esophagus)** **Hook visible?** ☐ **Visible to insertion point** / ☐ **Partial hook** / ☐ **Not visible**
☒ **Beak/Mouth** (Circle one) **Jaw Location** (Check one) ☐ **upper** ☒ **lower** ☐ **side (mouth only)**
 Check one for mouth: ☐ **tongue** ☐ **glottis** ☐ **roof of mouth** ☐ **jaw joint** ☒ **other (describe)**

External Hook Location (check general location and circle the specific location, if known).

Unknown, external: The animal has been hooked externally, but the specific location cannot be determined. This may be the case when an animal cannot be observed closely.

Beak/Head/Neck: The turtle is hooked in the neck or head, including the external beak area. Describe location in comments section.

Carapace/Plastron: The turtle is hooked in its carapace or plastron. Describe location in the comments section.

Front Flipper/Shoulder/Armpit: The turtle is hooked in its front limbs, armpits (trailing edge or ventral), or shoulders (leading edge). Describe which side (right or left) is involved in the comments section.

Rear Flipper/Groin/Tail: The turtle is hooked in its rear limbs, groin, or tail. Describe which side (right or left) is involved in the comments section.

Was hook recovered from this animal? Circle Y for Yes, N for No, Unknown, or Not Applicable. If animal is 'Not Hooked' then choose Not Applicable. If animal is 'Not Known If Hooked', determine whether the hook was retrieved and answer Yes, No, or Unknown accordingly (even though it is not positive that the hook penetrated the animal).

All gear types complete this section, as applicable.

Was animal entangled in gear at capture? Circle Y for Yes, N for No, or Unknown.

At release? Circle Y for Yes, N for No, and U for Unknown.

How much gear (linear feet) was left on turtle when released? Estimate or measure the amount of gear line left on turtle when released. For hook and line fisheries, this is the measurement of line from the eye of the hook, including crimp, left on the turtle. For lengths less than one foot, record the decimal fraction remaining. Record a zero if all line is removed.

BIOLOGICAL INFORMATION

Dimensions (see Chapter 5 of the Sea Turtle Research Techniques Manual)

For turtles that cannot be brought onboard, estimate its carapace length in feet.

Estimated Carapace Length (ft): Estimate length of the turtle if not brought onboard the vessel.

For boated turtles, take the carapace measurements in centimeters, to the nearest 0.1 cm, using a tape measure (curved) and using calipers (straight). Standard measurements are described below and illustrated in Figure 2. Measurements over-the-curve (curved) follow the curvature of the carapace. If barnacles, injury, or abnormality affect these measurements, record the details on the back of the form. Nearly all leatherbacks encountered will be too large for the calipers, but straight measurements should be taken if possible. Note: there is no straight notch to notch measurement due to leatherbacks morphology.

For detailed description and landmarks of the following measurements reference Chapter 5 of the Sea Turtle Research Techniques Manual and/or see Figure 2

Carapace Length, curved, notch-to-tip (standard): Record the distance between the center of the nuchal scute and the end of the longest postcentral scute, following the curvature of the dorsal center line. On leatherbacks the measurement is taken alongside (not over the top) of the vertebral (center) ridge.

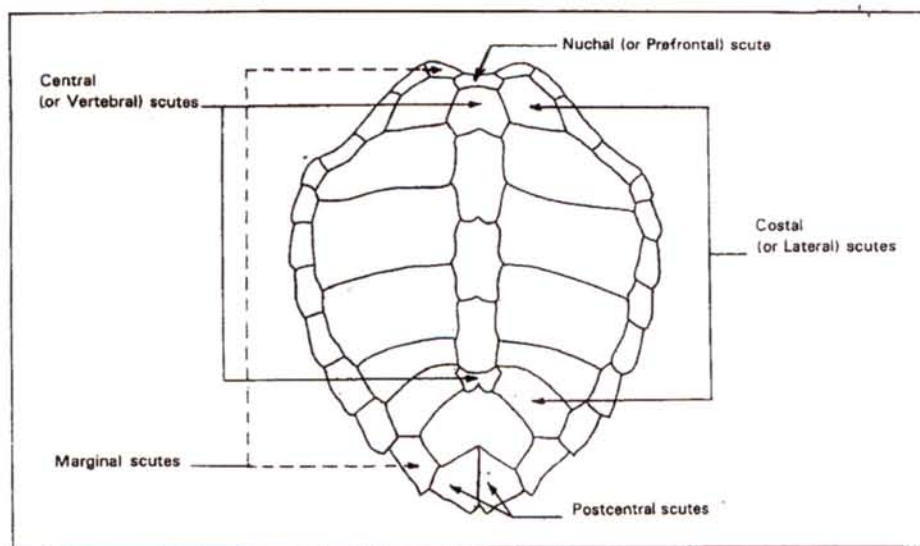
Carapace Length, straight, notch-to-tip (standard): Record the distance between the center of the nuchal scute and the end of the longest postcentral scute.

Carapace Length, straight, notch-to-notch (minimal): Record the distance between the center of the nuchal scute and the notch between the two postcentral scutes.

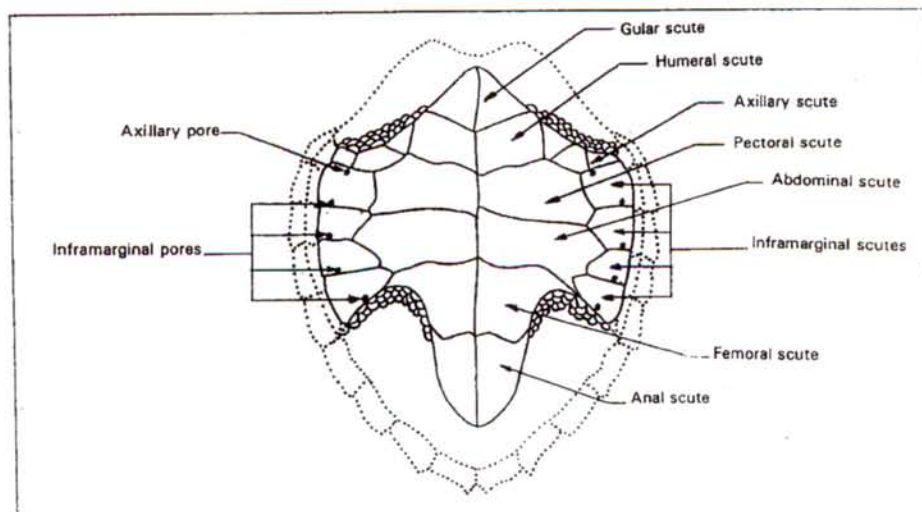
Carapace Width, curved: Record the maximum distance between the lateral edges of the carapace, measured over the curvature of the shell, perpendicular to the centerline of the carapace, at the widest point. On leatherbacks the width is measured from side ridge to side ridge at the widest point.

Carapace Width, straight: Record the maximum distance between the lateral edges of the carapace, perpendicular to the centerline of the carapace. Note: this measurement may be taken at a different place on the carapace than when measured over the curve with a tape measure.

Figure 2. Carapace and plastron illustrating the commonly used morphological names and their locations. (Diagram originally appeared in Reichart 1993.)



Carapace of an olive ridley turtle (*Lepidochelys olivacea*)
(Surinam specimen, scaled drawing by S. Handigman)



Plastron of an olive ridley turtle (*Lepidochelys olivacea*)
(Surinam specimen, scaled drawing by S. Handigman)

Tags

Look for existing tags. Figure 3 shows examples of tag types and position locations. Metal or plastic tags may be found externally on any of the four flippers. If no rear metal flipper tags are present, apply 2 inconel tags, one to each rear flipper. Living tags may be found externally on any of the lateral scutes, mainly on Kemp's ridley turtles. They are created by surgically removing a small piece of the plastron and implanting it in the carapace, creating a light spot on the carapace. In addition, there may be two types of internal tags (wire and PIT) placed in the shoulders or flippers. Due to additional equipment requirements, wire tagging is not covered in this manual. A PIT (Passive Integrated Transponder) tag is a glass encapsulated microchip carrying a unique code that is inserted into soft tissue. If no PIT tag is present, you will apply one (location varies by species). Generally, all turtles over 30 cm straight carapace length (SCL) should be flipper and PIT tagged if not already carrying tags. Turtles less than 20 cm SCL should only get a PIT tag. For turtles measuring between 20-30 cm SCL, the observer should use their best judgment to determine if flipper tagging is appropriate. See the detailed tag application instructions in Chapter 6 of the Sea Turtle Research Techniques Manual.

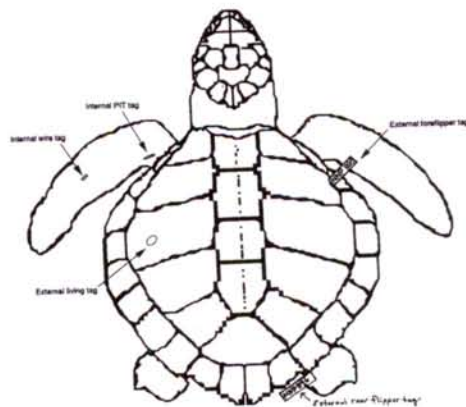
Flipper Tag Number: Record the number of the tag that is already present or that is being applied. If the tag is already present, record the return address of the tag in the comments section. If no tags are on the turtle and none are applied, leave blank.

Tag Type: Metal [1] or Plastic [2]: Identify the type of tag appearing on or to be applied to the turtle. If no tags are on the turtle and none are being applied, leave blank.

Position: The tag may be on any of the four flippers. Observers should apply two tags, one to each rear flipper, if none already are present at that location. Record the location of the tag. If no tags are on the turtle and none are being applied, leave blank.

Figure 3. Examples of typical external inconel flipper tags, living tags, and internal PIT tag position locations.

**Left Front Flipper [LF]
Right Front Flipper [RF]
Left Rear Flipper [LR]
Right Rear Flipper [RR]**



Already Present [1] or Applied by Observer [2]: Specify whether the tag was already present or whether it is being applied by the observer. If no tags are on the turtle and none are being applied, leave blank.

Were Tags Removed?: Circle Y for Yes or N for No to indicate if tags are removed. Any tags present prior to bringing the turtle onboard that are getting hard to read or about to fall off should be removed and, if taken from the rear flippers, replaced with new ones. The removed tags should be collected and provided to the Program Coordinator upon your return. If existing tags are in good condition, leave them in place. If tags were not removed from the turtle, leave blank.

PIT Tag: Scan the 4 flippers and the shoulder and “armpit” area with the PIT tag scanner. Remember when scanning to hold the scanner as close as possible to the turtle and keep the reader protected from the wet environment by sealing it in a water proof bag. There are a few PIT tag types available; these differ by applicator style and the length of the unique tag code. If a tag is found, record the decimal (vs hexadecimal) code, double check the code and ensure it has been written clearly as to not confuse zeros (0) for D’s or 8’s for B’s, etc. Generally the PIT tag codes are 10 or 15 bits long; rarely 9 or 16. Be especially diligent to recheck all 16 bit codes. When no PIT tag is present in either of the front flippers, inject one, see detailed instructions for PIT tag application and preferred placement location by species in Chapter 6 of the Sea Turtle Research Techniques Manual. Record the PIT tag number and attach the PIT tag sticker to the data sheet. If the PIT tag label has more than one code, record the one your scanner displays. Record the position of any existing PIT tag or the position where one is applied (example: LF, RF) and note whether the tag was already present or applied at this capture. If no PIT tags are in the turtle and none are applied, leave blank.

Scanned? Circle Y for Yes or N for No, indicating whether you scanned the flipper, shoulder, and armpit areas with a PIT tag scanner prior to and after application.

Living Tag: Specify whether any living tags are present. Record details, including position, in the comments section and photograph the mark. See Figure 3 for an example of a living tag position; here it is located in the 3rd left lateral scute.

Other Tags: When other types of tags, such as satellite tags, are present or are applied, record the tag number if it has one. Record details, including position, in the comments section and photograph the tag.

Biopsy Samples

Biopsy Samples Taken? Biopsy samples for genetic analysis should be taken from all turtles (see Chapter 8 in the Sea Turtle Research Techniques Manual). Were samples taken? Circle Y for Yes, N for No or Unsuccessful for an unsuccessful attempt. List all samples taken in the comments section. **If you are importing biopsy samples from the high seas (outside the U.S. EEZ), you must have a copy of the CITES permit and complete a USFWS 3-177 form listing all samples imported for that trip.** See page 20 for instructions for filling out a USFWS Form 3-177.

Release Information

Record the location (latitude and longitude) where the animal was released, release time and water temperature at that location. If the entire animal was returned to shore (salvaged or taken to holding facility), leave blank.

Latitude: Record the degrees and minutes of latitude at the time of the actual release of the animal. Circle N or S for north or south of the equator.

Longitude: Record the degrees and minutes of longitude at the time of the actual release of the animal. Circle E or W for east or west of the prime meridian.

Time: Record the time of day (24 hr clock) when the turtle was released.

Water Temperature: Record the water temperature at the location where the turtle was released.

Date: Record the year, month, and day the turtle was released if different from capture date.

Final Disposition

Record the final disposition (fate) of the turtle by checking the appropriate box:

Discarded Dead/Unresponsive Carcass: In some cases, a turtle may have shown signs of life while onboard, but if it is dead or unresponsive at release, it belongs in this category.

Marked? Circle Y for Yes or N for No. All carcasses returned to sea should be spray painted, tagged, or otherwise marked.

Salvaged Carcass/Parts (other than biopsy, explain): Indicate whether the carcass or parts of the carcass were salvaged and make notes in the comments section describing where the samples were taken. Indicate in the comments what part/s or sample/s were salvaged if applicable. **A current CITES permit is required to return with animals or parts taken on the high seas (outside the U.S. EEZ).**

Released Alive

Taken to Holding Facility

Unknown (explain)

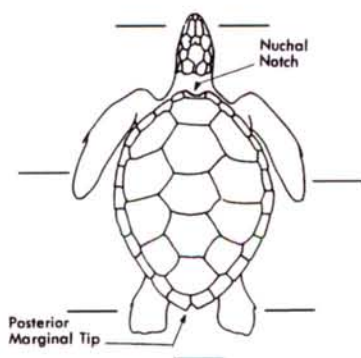
Additional Comments

Use this area to record any comments. Annotate the drawing to indicate any anomalies, location of living tags, etc. Also, be sure to list all biological samples collected. If resuscitation was attempted on the turtle, please record all details in this section (such as length of time resuscitation was attempted, method(s) used, etc.). If the sea turtle was cut free from the gear, disentangled, or a hook was removed, record the equipment used to perform the action. Monitor and record the turtle's behavior and swimming abilities upon release.

Condition Evaluation for Turtles Not Coded "Alive": When encountering a turtle that appears unresponsive, test the turtles' response to stimuli and detail findings on the lines around the turtle diagram, see Figure 4. Write a 'Y' for Yes to indicate a positive reflex/respondiveness, and 'N' for No response. Mark all 7 lines.

To check for a response, stimulate each of the general areas marked with lines on the diagram. To test eye reflexes, check for a blink response by lightly touching the skin around each eye. Position yourself to see both eyes at the same time to determine if the response was bilateral. Firmly pinch each flipper (both front and rear) and tail to check for a response. If there is a positive response, note whether or not it was limited to the stimulated area only or if it evoked a larger response (describe).

Figure 4. Condition evaluation diagram, used to indicate reflex test results for turtles not coded alive.



Rigor Mortis? Circle Y for Yes, N for No, and U for Unknown.

Rotting Flesh? Circle Y for Yes, N for No, and U for Unknown.

Foul Smell? Circle Y for Yes, N for No, and U for Unknown.

Identification Criteria (See Chapter 1 of the Sea Turtle Research Techniques Manual and Figure 2 for reference.)

Number of Left Lateral Scutes: Count and record the number of lateral (costal) scutes on the left side of the carapace.

Number of Right Lateral Scutes: Count and record the number of lateral (costal) scutes on the right side of the carapace.

Number of Vertebral Scutes: Count and record the number of scutes on the midline of the carapace.

Number of Left Inframarginal Scutes: Count and record the number of scutes on the turtle's left side of the plastron. The inframarginal scutes are those which are in contact with both the marginal carapace and plastron scutes.

Number of Right Inframarginal Scutes: Count and record the number of scutes on the turtle's right side of the plastron. The inframarginal scutes are those which are in contact with both the marginal carapace and plastron scutes.

Overlapping Scutes?: Are there overlapping scutes on the carapace? Circle Y for Yes, N for No, or U for Unknown.

Inframarginal Pores?: Are there pores located within the inframarginal scutes? Circle Y for Yes, N for No, or U for Unknown.

1 Pair of Prefrontal Scales?: Does the turtle have one pair of prefrontal scales? Circle Y for Yes, N for No, or U for Unknown.

Lacks Bony Shell?: Does the turtle lack a bony shell? Circle Y for Yes or N for No.

Nuchal scute: Does the nuchal scute touch the first lateral scute? Circle Y for Yes, N for No, or U for Unknown.

Dorsal Coloration: What is the dorsal coloration of the turtle? Check the most appropriate box choosing from **black**, **orange/red-brown**, **gray-green** or **other**. If **other** is selected, thoroughly describe the dorsal coloration.

VESSEL CAPTAIN, CREW AND OBSERVER RESPONSIBILITIES

Vessel Captain and Crew Responsibilities

The vessel captain and crew's responsibilities are outlined in the Careful Release Protocols for Sea Turtle Release with Minimal Injury, NOAA Technical Memorandum NMFS-SEFSC-580. The animal's safety, gear removal, and decisions whether a turtle is to be boated or resuscitated are the responsibility of the vessel's captain and crew.

Observer & Vessel Captain and Crew Responsibilities

All parties should minimize any possible injury to the animal while on deck, either by the animal bumping into objects on board or by objects falling on the animal due to boat movement. In addition, all parties are responsible for keeping the turtle moist and in the shade, and maintaining an acceptable body temperature. Moisture can be preserved by either covering the animal's body with a wet towel or by applying petroleum jelly on its skin and carapace. The animal's body temperature should not fall below 60° F and should be maintained similar to the water temperature of the capture and release locations.

Observer Responsibilities

The observer is to observe normal fishing operations and complete a Sea Turtle Life History Form for every sea turtle interacting with fishing gear. The observer is responsible for collecting and recording the biological data on the sea turtles (measuring, tagging, biopsying, etc). Crew assistance may be requested to complete these tasks. The animals' behaviors and swimming and diving abilities should be monitored after the release and noted on the form. The observer may educate the crew on known ways to dehook, disentangle, or use mouth openers and gags on an animal but are not to actually participate. On certain trips during experiments, the observer is also responsible for sending daily e-mails to the turtle coordinator relaying data on effort and protected species interactions. The observer will be made aware of such responsibilities if required.

SPECIMEN COLLECTION REQUIREMENTS

If possible, **retain** dead sea turtles after processing for return to port. Consider the size of the sea turtle, and whether freezer space is available. Consider, also, species and size and sampling priorities. These priorities will be given to you by the observer/fishery coordinator. If animals were taken on the high seas (outside the U.S. EEZ), you must have a CITES permit and a completed USFWS 3-177 form (see page 20 for instructions) to import the animal back to the United States.

If a sea turtle comes aboard dead and will be brought back to port:

- Leave all existing tags in place.
- Take three photographs; dorsal, ventral, and frontal views, in addition to gear interaction photograph.
- Complete Sea Turtle Life History Form and apply a single flipper tag, if one is not present.

Double bag and chill or freeze all retained samples. Each sample is to be individually tagged and labeled. The label is to be completed using only a “test scoring” pencil (#2). The label is to have the following information: trip number, specimen number, species, and sample identification (e.g., humerus). If many samples are collected from the same animal and placed into a common plastic bag, ensure that each part is properly tagged and labeled. Label the plastic bag with a large tag clearly stating its contents.

If you are importing a carcass from the high seas, notify the observer coordinator that you are returning to port when the date of docking is known, with no less than 48 hours notice.

MATERIALS FOR COLLECTING GENETIC TISSUE SAMPLES AND LABELING INSTRUCTIONS

- * scotch tape to protect writing on the vials
- * pencil to write on label
- * waterproof label, 1/4" x 4"
- * permanent marker to label the vials
- * screw-cap vial of saturated NaCl, wrapped in Parafilm®
- * piece of Parafilm® to wrap the cap of the vial after sample is taken
- * latex gloves
- * plastic board, ~6" x 4"
- * 10% povidone-iodine solution
- * alcohol swabs
- * 4 - 6 mm biopsy punch - sterile, disposable, for boated turtles
- * vial with sterile stainless steel corer for turtles not boated
- * Whirl-pak® to return / store sample vial

Most observer programs or research projects should include two types of biopsy kits in each sampling case: one for turtles not boated and one for turtles brought onboard. The one for turtles not boated can be distinguished by the presence of two types of vials: one for the storage of the dry, sterile corer and one that contains a preservative into which the corer is placed once a sample is taken. The kits for turtles that are boated contain one type of vial and also contain sterile individually wrapped biopsy punches.

Use the pencil to write trip number, specimen number, species id, and carapace length (SCL_{n-t}) on the waterproof paper label and place it in the vial. Label the outside of the vial using the permanent marker with trip number, specimen number, species id, and carapace length (SCL_{n-t}). Apply a piece of clear tape over what you have written on the vial to protect the writing from being erased or smeared by accidental leakage or friction. If a PIT tag was applied to the turtle, it is helpful to place one of the adhesive PIT tag ID labels to the vial in addition to the written information and secure with clear tape. Wrap Parafilm® around the outside of the vial cap by stretching it as you wrap. Do not place Parafilm® between the top of the vial and cap before sealing, and do not use clear tape around the outside of the vial cap. Place the vial within a labeled Whirl-pak® and close.

Submit the vial with your datasheets. Be sure to indicate on your datasheet that a biopsy sample was taken. If you are importing biopsy samples from the high seas (outside the U.S. EEZ), you must have a copy of the CITES permit and complete a USFWS 3-177 form (see instructions on page 20), listing all samples imported for that trip.

INSTRUCTIONS FOR FILLING OUT USFWS FORM 3-177 (Declaration of Importation or Exportation of Fish or Wildlife)

If you are importing a biopsy sample from a live or dead turtle, a carcass or samples/parts from a carcass from the high seas (outside the U.S. EEZ), you must fill out a USFWS Form 3-177 (See provided example, Figure 5) and return it with your biopsy sample vials. If you are unsure whether your samples were collected on the high seas, fill out a form and submit it. One form will suffice for each trip, summarizing the number of samples collected by species. Observers will need to fill in the following blocks:

1. Insert date of import (when the samples come into port).
4. Leave blank
6. Leave blank
7. Fill in FedEx if applicable
8. Fill in the FedEx Air Way Bill if applicable
11. Number of cartons containing wildlife- probably 1
12. Leave blank unless importing a carcass, describe container.
- 16a. Scientific name (reference TM-579, Chapter 1)
- 16b. Common name


If you are importing samples from more than one species under one trip, just list the scientific and common name on different lines, and the number of samples per species in box 19a.

- 18a. SPE for biopsy samples and BOD for whole carcass
- 19a. Fill in Quantity, number of samples per species (unit NO is already filled in)
20. Country of origin- generally "High Seas"
21. Please sign and date the form

See the following example to aid in the completion of the form. Please return this form with your biopsy samples to your project coordinator or Principal Investigator. If you have any questions, please feel free to contact Lesley Stokes at (305) 361-4228 or Lesley.Stokes@noaa.gov.

Figure 5. Example of USFWS FORM 3-177 (Declaration of Importation or Exportation of Fish or Wildlife).

USFWS Form 3-177
(Revised 12/06)
OMB No. 1018-0012
Expiration Date: 12/31/2009

 **U.S. FISH AND WILDLIFE SERVICE
DECLARATION FOR IMPORTATION
OR EXPORTATION OF
FISH OR WILDLIFE**

Page ____ of ____

1. Date of Import/Export (mm/dd/yyyy)	7. Name of Carrier: <u>Federal Express</u>
2. Import/Export License Number: <u>N/A</u>	8. Air Waybill or Bill of Lading Number: Master _____ House _____
3. Indicate One <input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	9. Transportation Code: <u>A</u> <u>N/A</u> License # _____ State or Province _____
4. Port of Clearance: <u>ML</u>	10. Bonded Location for Inspection: <u>Not Applicable</u>
5. Purpose Code: <u>S</u>	11. Number of Cartons Containing Wildlife: _____
6. Customs Document Number (s): _____	12. Markings on Cartons Containing Wildlife: <u>NA</u>

13a. (Indicate One) (Complete name/U.S. address/telephone number/e-mail address) <input checked="" type="checkbox"/> U.S. Importer <input type="checkbox"/> U.S. Exporter Dep. Comm., NOAA, Natl. Mar. Fish. Serv. Southeast Fisheries Science Center 75 Virginia Beach Drive Miami, FL 33149 USA	14a. (Indicate One) (Complete name/foreign address/telephone number/e-mail address) <input type="checkbox"/> Foreign Importer <input type="checkbox"/> Foreign Exporter <u>Not Applicable</u> Type Address Here	14b. Country Code: _____
13b. Identifier Number: _____ ID Type: _____	14c. Identifier Number: _____ ID Type: _____	

15a. Customs Broker, Shipping Agent or Freight Forwarder: (Complete business name/address/telephone and fax number/e-mail address) <u>Not Applicable</u> Type Address Here	15b. Identifier Number: _____ ID Type: _____
15c. Contact Name: _____	

Species Code (Official Use Only)	16a. Scientific Name	17a. Foreign CITES Permit Number	18a. Description Code	19a. Quantity/Unit	20. Country of Species Origin Code (ISO Code)	21. Venomous Live Wildlife Indicator <input type="checkbox"/> (Check if yes)
	16b. Common Name	17b. U.S. CITES Permit Number	18b. Source Code	19b. Total Monetary Value		
		<u>Not Applicable</u>	<u>SPE</u>	<u>NO</u>	<u>ZZ</u>	<input type="checkbox"/>
		<u>09US045532/9</u>	<u>W</u>	<u>\$0.00</u>		<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

Knowingly making a false statement in a Declaration for Importation or Exportation of Fish or Wildlife may subject the declarant to the penalty provided by 18 U.S.C. 1001 and 16 U.S.C. 3372(d).		22. I certify under penalty of perjury that the information furnished is true and correct. Signature _____ Date _____ Type or Print Name _____	
For Official Use Only Action/Comments: Wildlife Declared: Yes No Wildlife Inspected: None / Partial / Full			

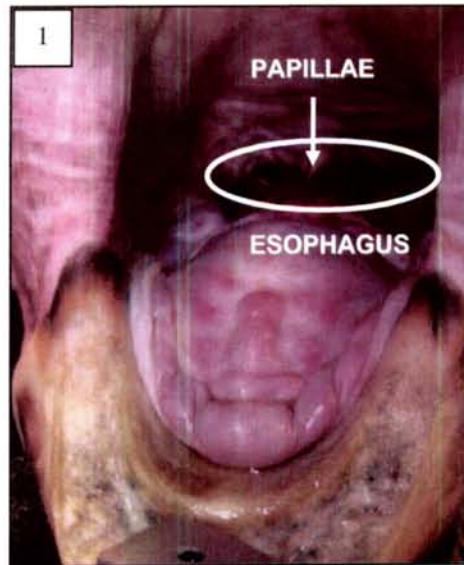
See Reverse Side of this Form for Privacy Act Notice

APPENDIX

Hook Locations

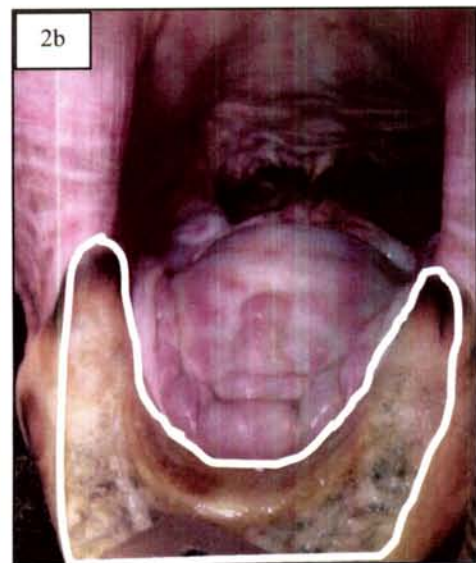
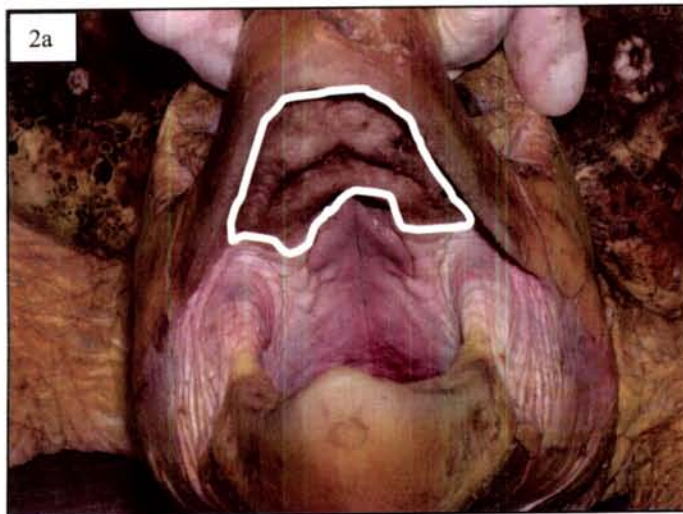
Internal:

1) Swallowed = inside the esophagus, the entrance marked by the presence of papillae. Indicate whether hook is visible to insertion point, partially visible, or not visible.



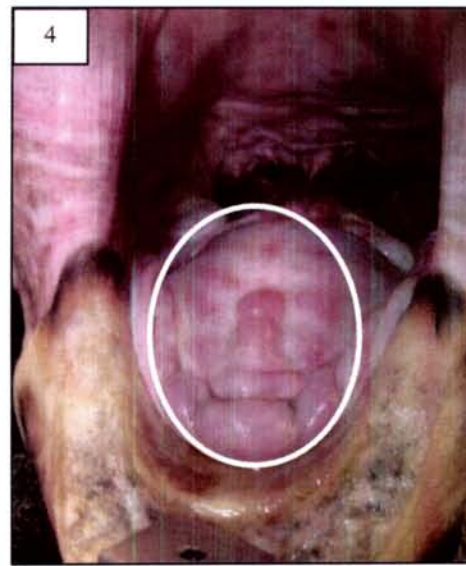
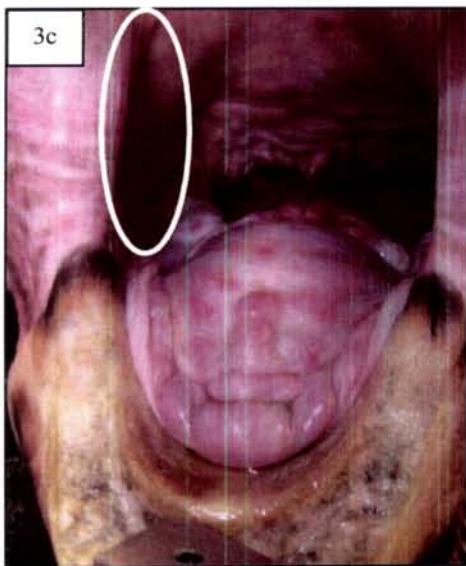
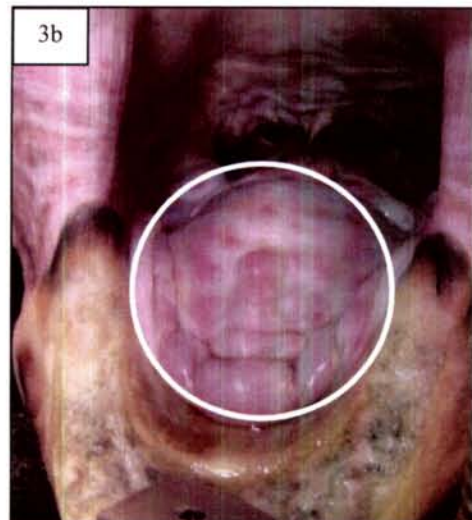
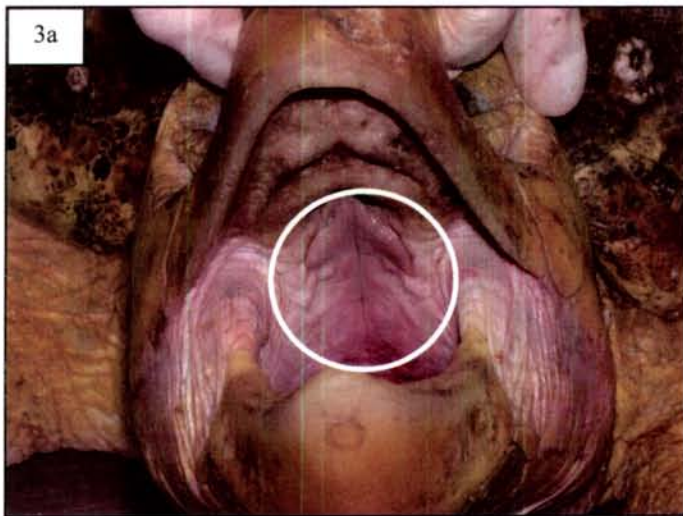
2) Internal Beak (hard keratinized rhampotheca- hardshell turtles only)

a) Upper or b) Lower

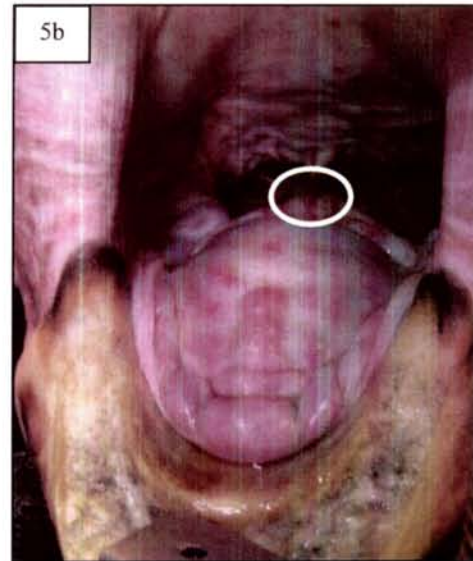
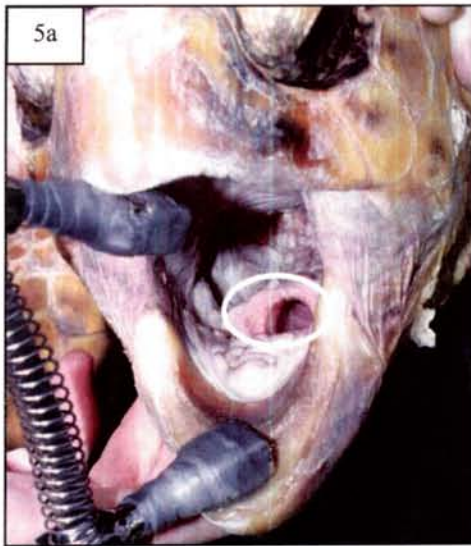


- 3) Mouth a) Upper (should generally be coded as roof of mouth)
 b) Lower (may be tongue, glottis, or other if under or beside the tongue)
 c) Side (could be jaw joint or other)

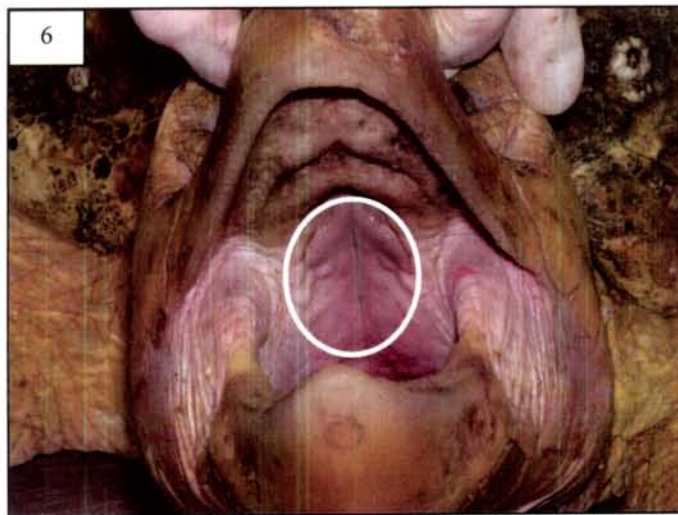
4) Tongue



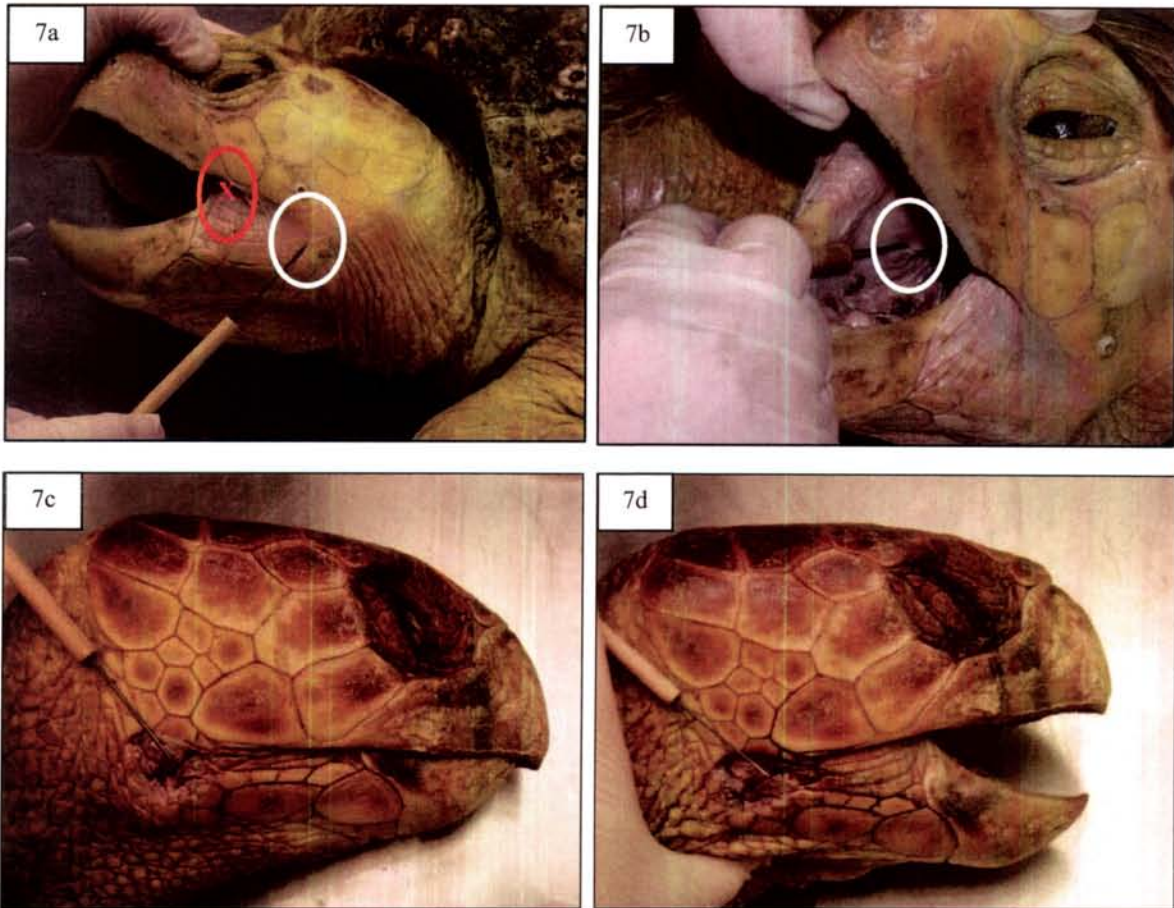
5) Glottis a) Open b) Closed



6) Roof of Mouth



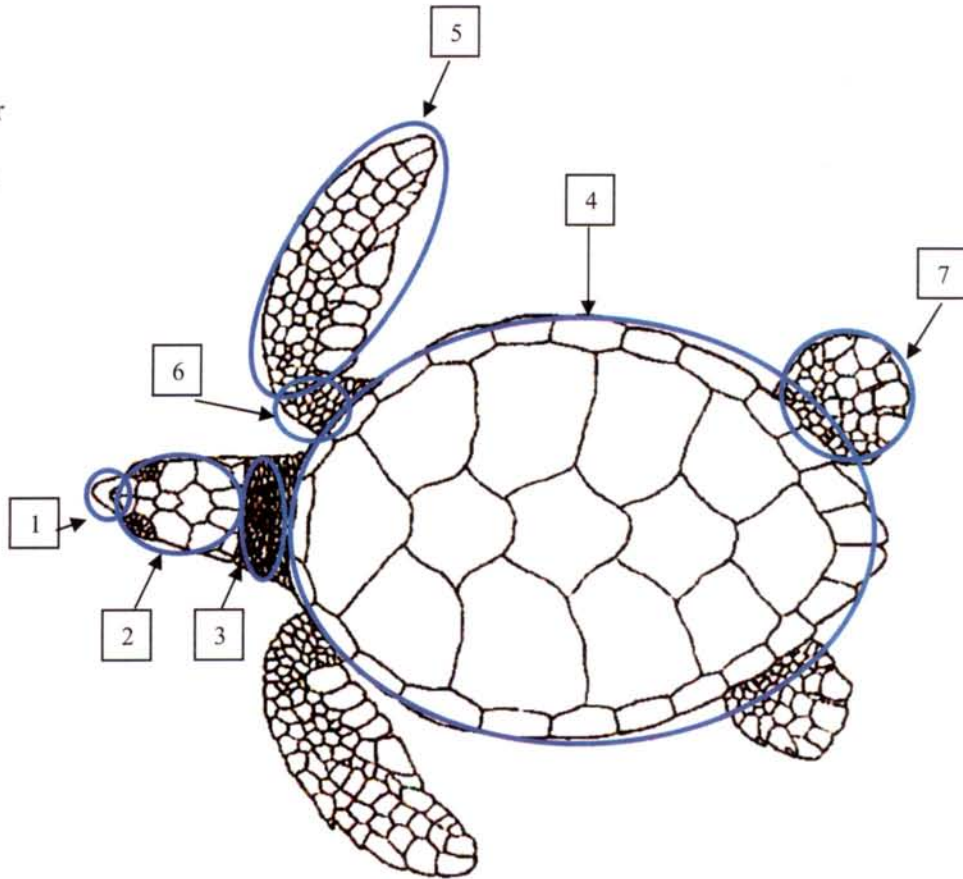
7) Jaw Joint a) external, b) internal, c) dissection depicting jaw joint with jaws closed, and d) dissection with jaws open. Note: this is **not** the corner of the mouth, depicted in Figure 7a by the **red** circle (which shows the “corner of the mouth”). To understand the difference, locate your own jaw joint (just in front of the ear) and notice its position relative to the corner of your mouth (where upper and lower lips meet).



8) Other = Any area not otherwise described here. For example, “mouth, lower, other” might be below the tongue in the soft tissue. “Mouth, side, other” could be the “corner of the mouth,” in the soft tissue connecting the jaws in front of the jaw joint. Describe in further detail in comments if possible.

External hardshell:

- 1) Beak
- 2) Head
- 3) Neck
- 4) Carapace
- 5) Front Flipper
- 6) Shoulder
- 7) Rear Flipper

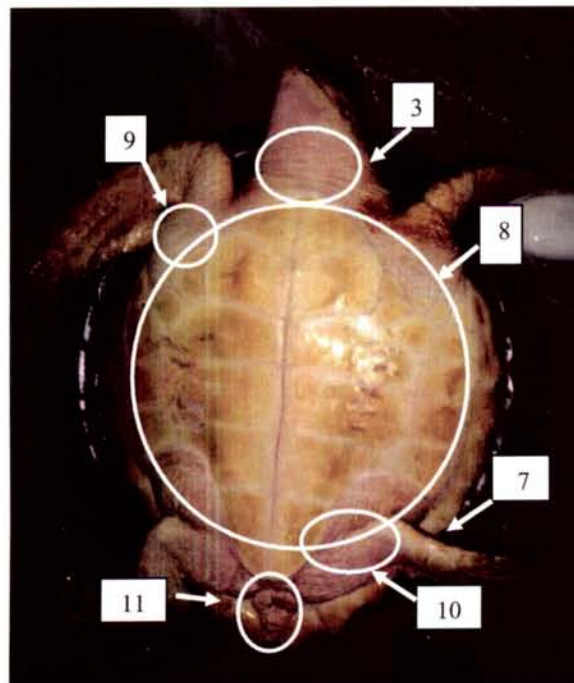
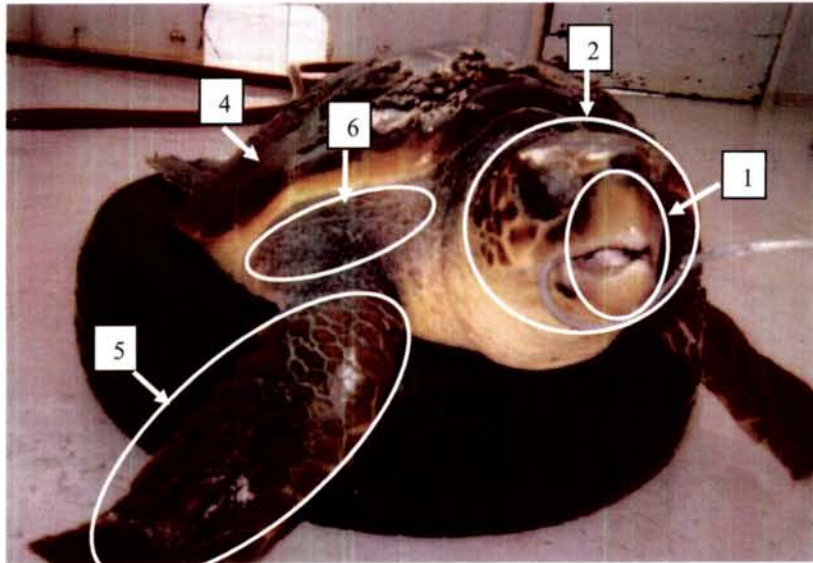


External hardshell:

- 1) Beak (hard keratinized rhamphotheca, either upper or lower, never side)
- 2) Head

- 3) Neck (dorsal and ventral surface)
- 4) Carapace
- 5) Front Flipper
- 6) Shoulder
- 7) Rear Flipper
- 8) Plastron

- 9) Armpit (ventral side and trailing edge of front flipper)
- 10) Groin
- 11) Tail

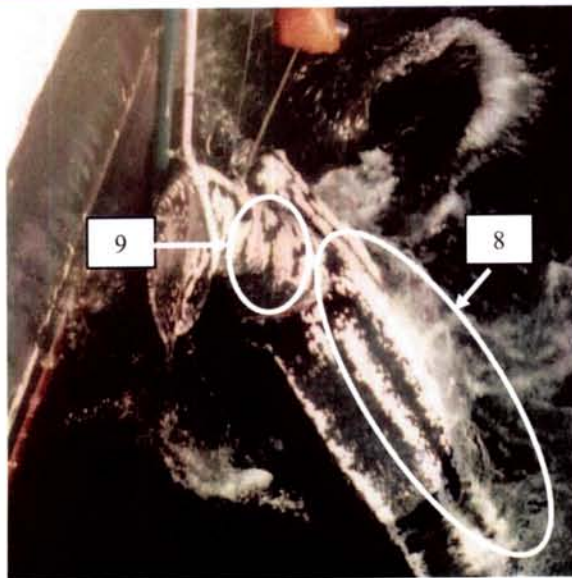
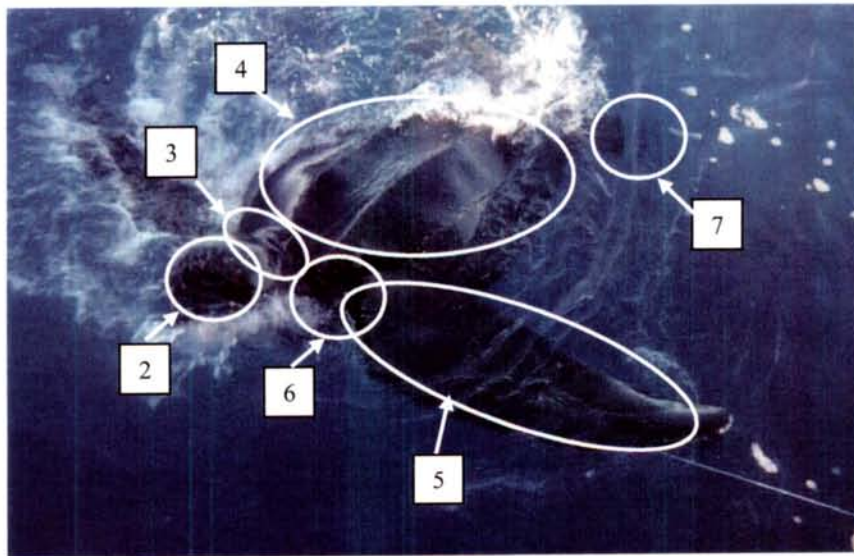


External Leatherback:

1) Beak (Leatherbacks do not have rhampotheca and should never be coded as hooked in the beak)
2) Head
3) Neck (dorsal and ventral)

4) Carapace
5) Front Flipper
6) Shoulder (dorsal surface and leading edge between front flipper and neck)
7) Rear Flipper
8) Plastron

9) Armpit (ventral surface and trailing edge between front flipper and plastron) and trailing edge between front flipper and plastron)
10) Groin
11) Tail



REFERENCES

National Marine Fisheries Service Southeast Fisheries Science Center. 2008. Sea Turtle Research Techniques Manual. NOAA Technical Memorandum NMFS-SEFSC-579, 92 p.

National Marine Fisheries Service Southeast Fisheries Science Center. 2008. Careful release protocols for sea turtle release with minimal injury. NOAA Technical Memorandum NMFS-SEFSC-580, 130 pp.

Reichert, H.A. 1993. Synopsis of biological data on the olive ridley sea turtle, *Lepidochelys olivacea* (Eschscholtz, 1829), in the western Atlantic. NOAA Technical Memorandum NMFS-SEFSC-336, 78pp.

Chapter 1: Species Identification

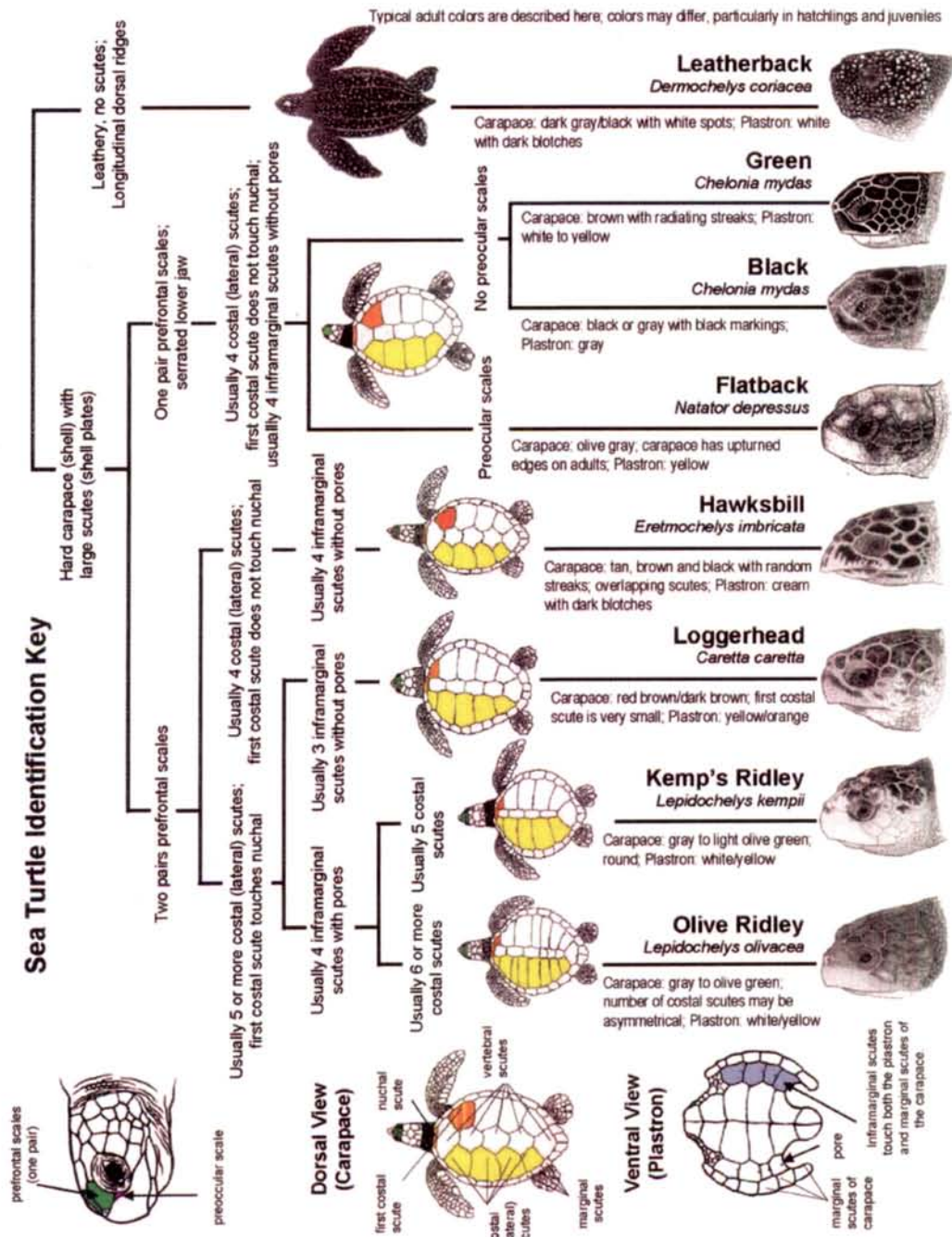


Figure 1-1. Sea turtle identification key (NMFS/SEFSC diagram modified from seaturtle.org).



Leatherback, *Dermochelys coriacea* (Spanish: Baula, Tortuga Laúd, Tora, Cardón, Tinglar; French: Tortue Luth; Portuguese: Tartaruga Gigante, Tartaruga-de-couro)
Adult Size Range: Length: 165-190+ cm/ 65-75+ in; **Weight:** 400-500 kg females, males to 900 kg/ 885-1985 lb
Range: All oceans, sub-arctic to tropical; mainly pelagic oceanic (surface dwelling in the open ocean) but found in bays and over continental shelves

Green, Black*, *Chelonia mydas* (Spanish: Tortuga Verde, Tortuga Blanca; Tortuga Negra, Prieta; French: Tortue Verte; Portuguese: Tartaruga Verde, Aruanã)
Adult Size Range: Length: 90-120 cm/ 35-45 in; **Weight:** 120-230 kg/ 265-510 lb
Range: All subtropical and tropical seas; bays and coastal waters; black form restricted to eastern Pacific Ocean; pelagic oceanic (surface dwelling in the open ocean) small juveniles; benthic neritic (bottom dwelling in coastal waters) large juveniles and adults
 *The status of the black turtle or eastern Pacific green turtle as *Chelonia agassizii* or *C. mydas agassizii* as a distinct species or subspecies is not supported, although it is often treated as such.

Flatback, *Natator depressus* (Spanish: Kikila, Tortuga Aplanada, Tortuga Franca Oriental; French: Chelonée à dos Plat; Portuguese: Tartaruga de Casco Achatado)
Adult Size Range: Length: to 100 cm/ 40 in; **Weight:** to 90 kg/ 200 lb
Range: Tropical coastal Australia, including the waters up to Irian Jaya, Papua New Guinea and Java; pelagic neritic (surface dwelling in coastal waters)

Hawksbill, *Eretmochelys imbricata* (Spanish: Tortuga Carey; French: Tortue Imbriquée, Tortue Caret; Portuguese: Tartaruga-de-pente, Tartaruga de Escamas, Tartaruga Bico de Falcão, Tartaruga Verdadeira)
Adult Size Range: Length: 90-110+ cm/ 35-45+ in; **Weight:** 60-80 kg/ 130-175 lb
Range: All oceans; tropical waters, rarely subtropical; reef areas; pelagic oceanic (surface dwelling in the open ocean) small juveniles; benthic neritic (bottom dwelling in coastal waters) large juveniles and adults

Loggerhead, *Caretta caretta* (Spanish: Caguama, Amarilla, Cabezona, Tortuga Boba; French: Caouanne; Portuguese: Tartaruga Boba, Tartaruga Comum, Tartaruga Careta, Tartaruga Cabeçada, Tartaruga amarela, Careba Dura, Careba Amarela)
Adult Size Range: Length: 90-130 cm/ 35-50 in; **Weight:** 100-180 kg/ 220-400 lb
Range: All oceans; primarily subtropical and temperate waters; often associated with structures (i.e., reefs, wrecks, platforms); pelagic oceanic (surface dwelling in the open ocean) small juveniles; benthic neritic (bottom dwelling in coastal waters) large juveniles and adults

Kemp's Ridley, *Lepidochelys kempii* (Spanish: Tortuga Lora, Cotorra; French: Tortue de Kemp; Portuguese: Tartaruga de Kemp)
Adult Size Range: Length: to 70 cm/ 28 in; **Weight:** 35-50 kg/ 80-110 lb
Range: Gulf of Mexico, eastern USA, rarely in eastern North Atlantic; coastal, primarily subtropical and temperate waters; pelagic oceanic (surface dwelling in the open ocean) small juveniles; benthic neritic (bottom dwelling in coastal waters) large juveniles and adults

Olive Ridley, *Lepidochelys olivacea* (Spanish: Tortuga Golfina, Tortuga Olivacea, Parlama, Guaraguá, Mani; French: Tortue Olivâtre; Portuguese: Tartaruga Oliva, Tartaruga Olivacea, Tartaruga Pequena, Xibirro)
Adult Size Range: Length: 70-80 cm/ 28-32 in; **Weight:** 35-60 kg/ 80-130 lb
Range: Pacific, Indian and Atlantic Oceans, rarely in eastern North Atlantic; pelagic oceanic (surface dwelling in the open ocean); most often in tropical waters

Sources:

Seaturtle.org

Pritchard, P. C. H. and Mortimer, J. A. (1999) Taxonomy, External Morphology, and Species Identification. pp. 21-38. In: Eckert, K.L., K.A. Bjorndal, F.A. Abreu-Grobois, and M. Donnelly (Editors). 1999. Research and Management Techniques for the Conservation of Sea Turtles. IUCN/SSC Marine Turtle Specialist Group Publication No. 4. (for further details see <http://www.iucn-mts.org/publications.htm>)

Wyneken, J. The Anatomy of Sea Turtles. 2001. U.S. Department of Commerce NOAA Technical Memorandum NMFS-SEFSC-470, 172 pp.

Sea turtle figures used by permission of the Marine Turtle Specialist Group (iucn-mts.org), Peter Pritchard and Jeanette Wyneken
 Illustrations by Tom McFarland and Dawn Witherington

Chapter 5: Morphometrics

Standard Measurements

If the turtle can be brought onboard or on land, take standard carapace measurements: CCL, SCL_{STD} , SCL_{MIN} , CCW, and SCW. Use a flexible fiberglass tape measure to take over-the-curve measurements and calipers for straight measurements; record in centimeters, rounded to the nearest 0.1 cm. For measurements over-the-curve (CCL and CCW), follow the curvature of the carapace. If barnacles affect these measurements, record this in the comments on the datasheet. For leatherbacks, generally only curved measurements are taken.

Methodology to weigh turtles will differ slightly depending on the type of scale available, but in all cases, the turtle must be adequately restrained so there is no potential for injury from this procedure. The scale, sling or platform used should be disinfected between animals when practicable.

CCL – Curved Carapace Length, standard (notch-to-tip): Record the distance between the center of the nuchal scute and the posterior tip of the longest postcentral scute, following the curvature of the dorsal centerline (Figures 5-1 and 5-3). On leatherbacks, take the measurement alongside (not over the top) the central vertebral ridge (Figure 5-4).



Figure 5-1. Curved carapace length taken with flexible fiberglass tape measure (NMFS/SEFSC photo).



Figure 5-2. Straight carapace length (SCL) measurement, notch-to-tip (NMFS/SEFSC photo).

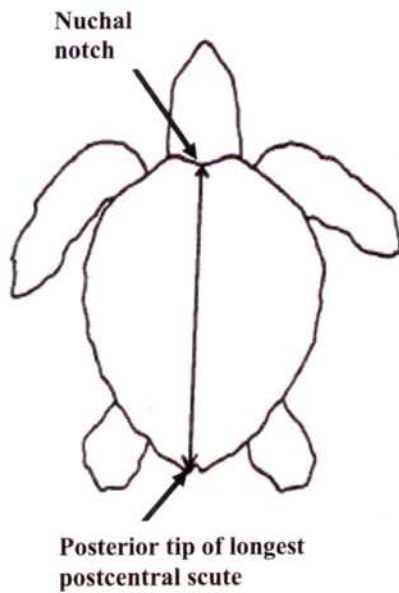


Figure 5-3. Carapace length (CCL and SCL) measurement, notch to tip [Figure modified from Bolten (1999)].

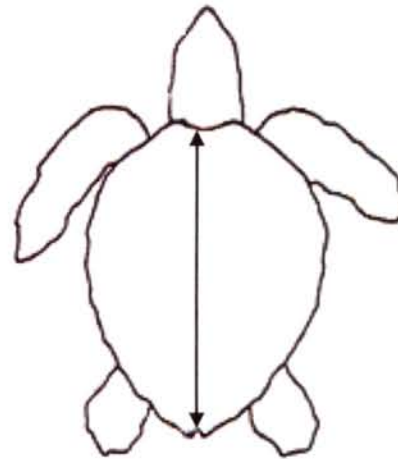


Figure 5-5. Carapace length (CCL and SCL) measurement, notch to notch [Figure modified from Bolten (1999)].

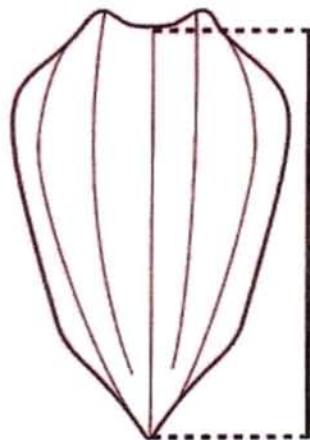


Figure 5-4. Curved carapace length (CCL) and straight carapace length (SCL) in leatherback turtles. In both cases, length is measured from the nuchal notch (anterior edge of the carapace at the midline) to the posterior tip of the caudal peduncle [Figure and caption text taken from Bolten (1999)].

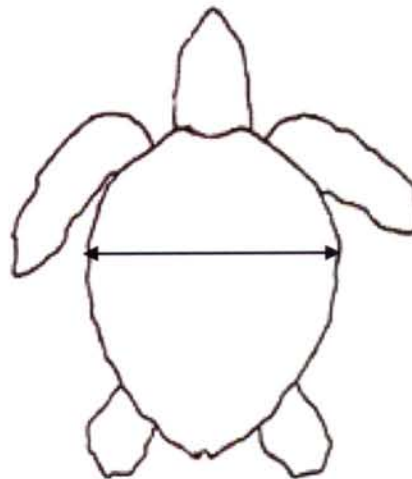


Figure 5-6. Carapace width (CCW and SCW) measurement [Figure modified from Bolten (1999)].

SCL_{STD} – Straight Carapace Length, standard (notch-to-tip): Record the distance between the center of the nuchal scute and the posterior tip of the longest postcentral scute (Figures 5-2 and 5-3).

SCL_{MIN} – Straight Carapace Length, minimal (notch-to-notch): Record the distance between the center of the nuchal scute and the notch between the two postcentral scutes (Figure 5-5).

CCW – Curved Carapace Width: On leatherbacks, measure the width from side ridge to side ridge (ridges depicted in Figure 5-4) at the widest point. On hardshell turtles, record the maximum distance between the lateral edges of the carapace, measured over the curvature of the shell, perpendicular to the longitudinal axis of the carapace at the widest point (Figures 5-6 and 5-7).

SCW – Straight Carapace Width: Record the maximum distance between the lateral edges of the carapace taken perpendicular to the longitudinal axis of the carapace at the widest point (Figures 5-6 and 5-8).



Figure 5-7. Curved carapace width (CCW) measurement (NMFS/SEFSC photo).



Figure 5-8. Straight carapace width (SCW) measurement (NMFS/SEFSC photo).

Additional Measurements

Additional measurements (maximum carapace length, maximum head width, maximum head length, body depth, plastron length, total tail length, plastron-to-vent length, vent-to-tip length, and circumference) may be taken as needed, following the protocols of Wyneken (2001).

Oral Cavity Measurements

Measures of the jaw and internal oral cavity anatomy may be taken to investigate oral cavity dimensions, particularly as they relate to a turtle's ability to swallow hooks of various sizes. All measures are taken using spring and/or dial calipers while the mouth is held open with a canine mouth gag (a type of oral speculum available from veterinary equipment suppliers). The canine mouth gag tips should be padded to reduce damage to the beak as the turtle bites down on the gag. All mouth measurement instruments should be cold sterilized using 2% chlorhexidine gluconate or similar between each use.

These oral cavity measures include:

Internal Gape Width: Measure is taken with spring calipers at the midpoint of the lateral oral commissures, the soft tissue connecting upper and lower jaws at the angles of the mouth, while the jaws are held open to their full extent with a canine mouth gag. Fixed spring caliper distance is then measured using dial calipers.

Esophagus Width: Measure is taken with spring calipers at the entrance of the esophagus (Figure 5-9), marked by the first presence of papillae. This distance is then

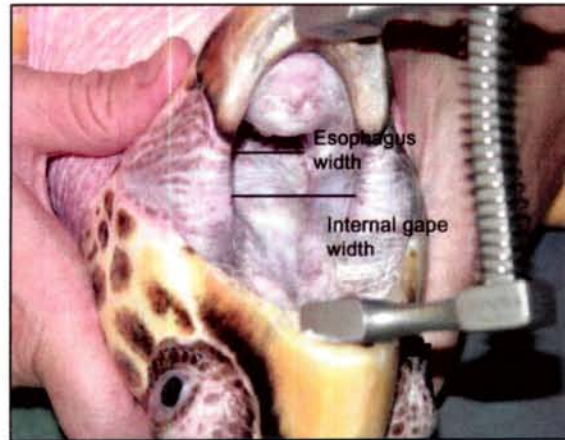


Figure 5-9. Internal oral cavity measurements: internal gape width, esophagus width (NMFS/SEFSC photo).

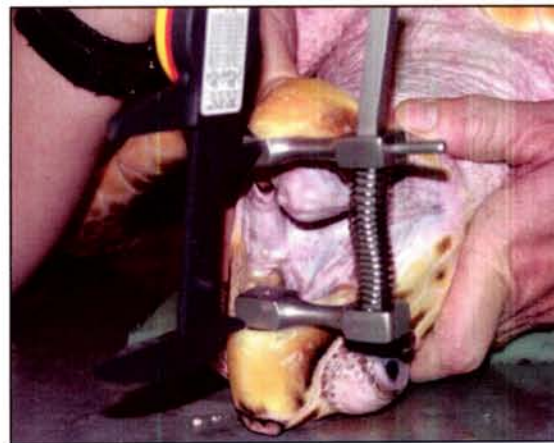


Figure 5-10. Gape Height (NMFS/SEFSC photo).

measured with dial calipers. Note: this is a flexible opening, and the measurement represents a close approximation of the unstretched diameter of the esophagus width.

Gape Height: Measure is taken using dial calipers while jaws are held open to full extent with a canine mouth gag (Figure 5-10), representing the maximum internal distance between the distal points of the upper and lower jaw.

Upper Jaw Length: Measure is taken with dial calipers from the soft tissue at the

insertion point of the rhamphotheca (keratinaceous beak) to the distal point of the upper jaw (Figure 5-11).

Lower Jaw Length: Measure is taken with dial calipers from the soft tissue at the insertion point of the rhamphotheca (keratinaceous beak) to the distal point of the lower jaw (Figure 5-12).



Figure 5-11. Upper jaw length (NMFS/SEFSC photo).

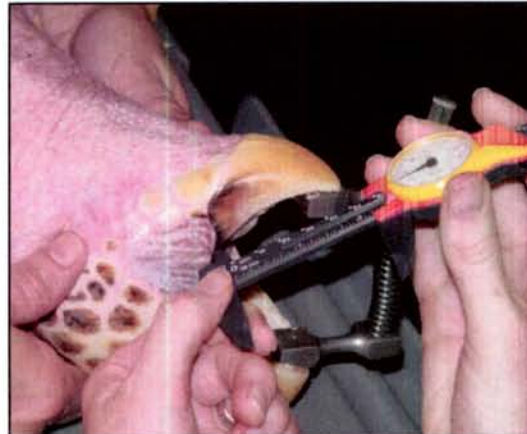


Figure 5-12. Lower jaw length (NMFS/SEFSC photo).

SEA TURTLE LIFE HISTORY FORM

01/2013

CAPTURE INFORMATION

TRIP YEAR 20 MONTH DAY

SET/HAUL/TOW SPECIMEN NUMBER BY TRIP EXPERIMENTAL Y / N?
 (if Y, note project name in comments)

GEAR TYPE: ☐ Longline ☐ Gill Net ☐ Trawl (note time in comments)

GEAR DEPTH: ☐ Surface ☐ Midwater ☐ Bottom ☐ Other

TARGET CATCH: TIME (24 hr) WATER TEMP (°F)

LATITUDE deg min N / S LONGITUDE deg min E / W

Did turtle slide out/escape from gear? Y / N Was turtle brought on board? Y / N

IDENTIFICATION (see back)

Number of Photos Taken?

SPECIES: ☐ Leatherback ☐ Loggerhead ☐ Kemp's ridley ☐ Green ☐ Hawksbill ☐ Olive ridley
 ☐ Unidentified Hardshell ☐ Unknown

CONDITION OF TURTLE AT CAPTURE ☐ Injured ☐ Uninjured ☐ Unknown

(Please check injury status above as well as condition below; complete condition evaluation on p. 2 for any not coded "alive")

☐ Previously dead ☐ Fresh dead/comatose/unresponsive Attempted resuscitation: Hindquarters Elevated? Y / N
 ☐ Alive ☐ Unknown (describe) ☐ Other (describe) Rocked? Y / N

IF GEAR IS A FORM OF HOOK AND LINE, COMPLETE THIS SECTION, AS APPLICABLE:

HOOK TYPE ☐ "J" ☐ Circle ☐ other (describe) SIZE / 0

MANUFACTURER/STYLE NO. DEGREE OFFSET °

BAIT ☐ Squid ☐ Mackerel ☐ Sardine ☐ Unknown ☐ Other (describe) SIZE

Caught on hook timer? Y / N If yes, fill in time elapsed

Is a light stick on hook? Y / N / U / Not Applicable If No, number of gangions to next light stick

Light stick type (circle): Chemical / LED

Light stick color (circle)? White, Pink, Blue, Green, Black, Red, Yellow, Purple, Other, Unknown

Number of gangions to next float

HOOK LOCATION (See Appendix in manual for descriptive figures)

(circle specific location; check box if specifics are not known; annotate drawing on reverse to indicate location as needed):

☐ Not Hooked ☐ Not Known if Hooked ☐ Hooked, but location totally Unknown ☐ Holding bait/hook

Internal: ☐ Unknown, internal

☐ Swallowed (Esophagus) Hook visible? Visible to insertion point / Partial hook / Not visible

☐ Beak/Mouth (Circle one) Jaw Location (Check one) ☐ upper ☐ lower ☐ side (mouth only)

Check one for mouth: ☐ tongue ☐ glottis ☐ roof of mouth ☐ jaw joint ☐ other (describe)

External: ☐ Unknown, external

☐ Beak/Head/Neck ☐ Carapace/Plastron

☐ Front Flipper/Shoulder/Armpit ☐ Rear Flipper/Groin/Tail

Was hook recovered from this animal? Y / N / Unknown / Not Applicable

Was animal entangled in gear? At capture? Y / N / Unknown At Release? Y / N / Unknown

How much gear (linear feet) was left on turtle when released? ft. (estimated/measured)

BIOLOGICAL INFORMATION

Estimated carapace length (notch-to-tip straight line): . ft (needed only if turtle is not boated & measured)

DIMENSIONS (cm) Curved (measuring tape)
 Standard Measurements
 Carapace Length notch-to-tip
 Carapace Width

Straight Line (calipers)
Standard Measurements
. notch-to-tip
.

Straight Line (calipers)

notch-to-notch

TAGS (identify address on each tag in the comments section)

Flipper Tag Number	Metal (1) or Plastic (2)	Position (Flipper) LF, RF, LR, RR	Already Present (1) or Applied by Observer (2)	Were Tags Removed?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	Y / N
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	Y / N
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	Y / N
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	Y / N

PIT Tag Position (Flipper) Scanned? Y / N

Living Tag (describe)_____ Other Tags (describe) _____

(Put PIT tag label here) If you have the option of Decimal or Hexidecimal sequence, choose DECIMAL

BIOPSY SAMPLES TAKEN? Y (itemize below) / N / Unsuccessful

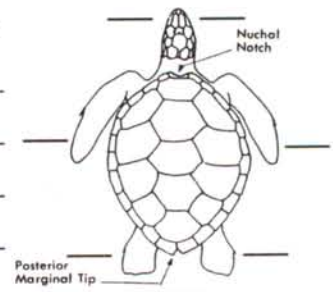
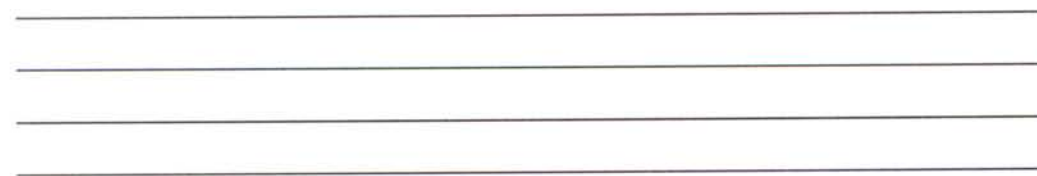
RELEASE INFORMATION

LATITUDE deg min N / S LONGITUDE deg min E / W
TIME (24 hr) WATER TEMP (°F)
DATE, if different from capture: YEAR 20 MONTH DAY

FINAL DISPOSITION

☐ Discarded Dead/Comatose/Unresponsive Carcass Marked? Y / N
☐ Salvaged Carcass/Parts ☐ Released Alive ☐ Taken to Holding Facility ☐ Unknown (explain)

ADDITIONAL COMMENTS (list all biological samples collected; describe/sketch anomalies):



IDENTIFICATION CRITERIA

Number of:			
Left Lateral Scutes	<input type="checkbox"/>	Overlapping Scutes?	Y / N / U
Right Lateral Scutes	<input type="checkbox"/>	Inframarginal Pores?	Y / N / U
Vertebral Scutes	<input type="checkbox"/>	1 Pair Prefrontal Scales?	Y / N / U
L. Inframarginal Scutes	<input type="checkbox"/>	Lacks Bony Shell?	Y / N
R. Inframarginal Scutes	<input type="checkbox"/>	Does Nuchal Scute Touch 1st Lateral Scute?	Y / N / U

Dorsal Coloration ☐ Black ☐ Orange/Red-Brown ☐ Brown ☐ Gray-Green ☐ Other _____

CONDITION EVALUATION FOR TURTLES NOT CODED "ALIVE"

Mark each line on diagram above with a 'Y' to indicate positive reflex/response, and 'N' for no response.

Rigor Mortis	Y / N / U
Rotting Flesh	Y / N / U
Foul Smell	Y / N / U

PROTECTED RESOURCES FORM

Write legibly in both the log book and on the forms themselves. **COPIES** of the protected resources form and photos are to be mailed to the Panama City Laboratory as soon as possible after the vessel reaches port (Original Forms are to be kept with the trip at all times!!!). **DO NOT MAIL FORMS, PHOTOS, AND BIOPSIES DIRECTLY TO THE MIAMI LABORATORY.**

It is pertinent that all information collected on the protected resources capture report is as **accurate** and **detailed** as possible. **Detailed information should also be logged in your log books.** We are unable to verify questionable information on the forms if we have nothing to compare it to.

The protected resources form is to be used to log the capture of **SAWFISH, STURGEON, and BIRDS.** Photographs should be taken of all captures if possible. If the information does not apply to your trip, for example hook information on a shrimp trip, the section should be left blank. It is very important to complete the form in its entirety.

Trip No.: Enter Trip Number provided by Observer Coordinator.

Date: Enter month day and year when captured occurred.

Set/Tow: Record the set or tow number during the trip when capture occurred. If the capture was not associated (non-station) with a set or tow then enter 999.

Station/Non-Station: Check station if the specimen was captured during a sampled set or tow. All others should be considered non-station.

Captured/Sighted: Captured should always be checked as information is only collected for captures.

Specimen Number: Record a three digit consecutive number for captured specimens. Specimen numbers begin with 001 and continue sequentially throughout the trip.

Species Identification: Place a check in the appropriate box next to the specimen captured and reference the species (if known) in the space provided. If you are unable to identify the species record it on the data sheet as "Unknown".

Time: Enter in military time (0000-2359) when capture occurred.

Water Depth: Record the water depth in feet.

Photographed (circle one): Y or N. **Number of Photos Taken?** Record the number of photos taken. Always photograph the specimen if possible. Take at least one picture illustrating the location of gear attachment. This should never be left blank, it is asking for quantity. So if no photos were taken you should place a zero in the boxes provided.

Latitude: Record the degrees and decimal minutes of latitude at the time of capture.

Longitude: Record the degrees, and decimal minutes of longitude at the time of capture.

Target Species: List all species being targeted for the set in genus species format. Enter the first seven characters of the genus name and the first 6 characters of the species name (refer to Reef Fish Species List), **do not reference common names.**

Gear Type: Indicate which gear is being fished. If gear is something other than the listed types, write the gear type in the comments section.

Gear Depth: Indicate whether the gear was being fished at the surface, mid-water, on the bottom, or other. If other, reference the depth in the comment section.

Net Position: Enter net position at time of capture. For captures in a try net or non-station captures enter 9 (default code).

Net Type Turtle Captured In: Check the appropriate answer to describe the type of net specimen was captured in.

Net Modifications: Check the appropriate answer to explain all net modifications present.

Gillnet Net Material: Check either monofilament or multifilament gillnet gear.

Stretched Mesh size: Record

Twine size: Record the twine size used in the net. This information can be obtained from the Captain.

Net Length: Record the gillnet length in feet.

Net Depth: Record the gillnet depth in feet.

Hook Type: Check “J” or Circle. If hook type is neither, select Other (describe).

Hook Size: Write in size of hook, (e.g., 9/0, 18/0).

Manufacturer/Style No.: Write in the manufacturer and style number (e.g., Mustad #39968D).

Degree Offset: Write in the degree offset of hook (e.g., 0°, 5°, 10°).

Bait: Check all that apply: Squid, Mackerel, Sardine, Unknown or Other (describe). Enter the size of bait used.

Was hook removed from this animal? Circle Yes, No, Unknown, or Not Applicable. If specimen was 'Not Hooked', or 'Not known if hooked' then mark 'Not Applicable'. This question should also be answered, for shrimp trips please circle "Not Applicable".

Was animal entangled in gear at capture? These should always be answered. Circle Yes, No, or Unknown. **At release?** Circle Yes, No, or Unknown.

How much gear (linear feet) was left on the animal when released? Estimate or measure the amount of gear line left on specimen when released. Record a zero if all line is removed.

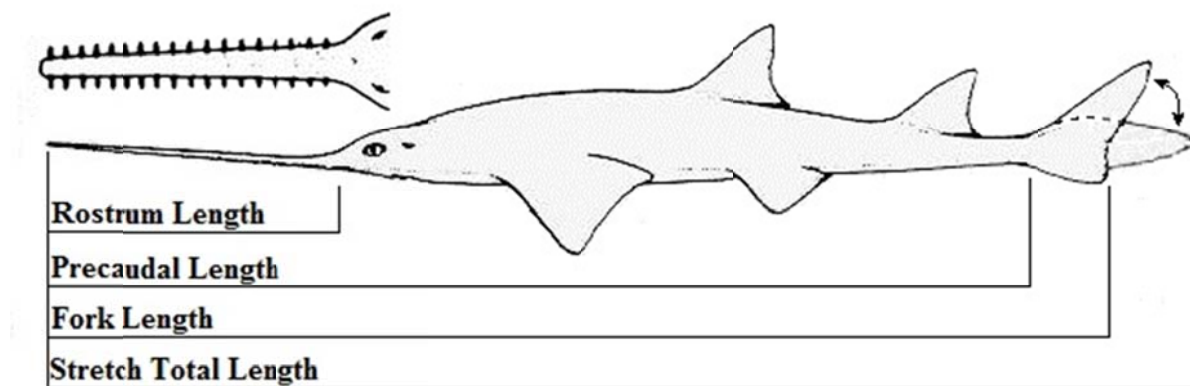
BIOLOGICAL INFORMATION

Estimated total length: Record in Feet.

Estimated length of rostrum: Record length of saw in Feet (for sawfish only).

If the animal is boated:

Sex: Circle Male, Female or Unknown



Precaudal Length: Record straight line measurement in cm.

Fork Length: Record straight line measurement in cm.

Stretch Total Length: Stretching the caudal fin down to the vertical (see diagram), record straight line measurement in cm. **For birds,** record total wingspan (fully spread).

Rostrum Length: Record straight line measurement in cm (for sawfish only).

Rostral teeth: Count and record the number of teeth on either side of the saw (for sawfish only).

TAG ID NUMBERS

Was this animal PIT scanned? Circle Yes or No and if a PIT tag is found, record the number in the boxes provided. **Note:** PIT tags in sawfish and sturgeon are usually inserted at the base of the first dorsal fin. Sturgeon may actually have two PIT tags.

There is space provided for 4 tags. Record the tag number and color. Note the location of the tag. If there is a tag in both fins record both numbers and colors. Additional information can be added below in the comments section. **Do not reference any tags that you have applied to the animal in this section.**

Release Information

Latitude/Longitude, Time and Date is **NOT** always the same information referenced for time of capture. Be as detailed as possible.

Time: Enter in military time (0000-2359) when specimen was released.

Date: Enter month, day and year when specimen was released.

Latitude: Record the degrees and decimal minutes of latitude at the time of release.

Longitude: Record the degrees and decimal minutes of longitude at the time of release.

Final Disposition: Record the final disposition (fate) of the specimen at time of release by checking the appropriate box.

Discarded Dead/Unresponsive Carcass

Released Alive

Unknown (explain)

Biological Samples: Check the appropriate boxes for any samples that you take from the animal.

Additional Comments: Use this area to record any and all comments. Describe the interaction with as much detail as possible. Record information on any tags that you apply to the animal (you may be issued spaghetti or PAT (satellite) tags). **DO NOT PIT TAG STURGEON OR SAWFISH, JUST SCAN FOR EXISTING TAGS!!!!**

Observer sampling protocol for sawfish

If boated alive:

- Secure the rostrum with help from the crew. Live sawfish are **DANGEROUS**
- Scan for PIT tags
 - Around the base of the dorsal fins
- Check for external tags
 - Around the base of the dorsal fins
- Take a precaudal length, a fork length, stretched total length and rostrum length measurement in cm
 - Straight line measurements
- Count the rostral teeth on either side of the saw
- Check the sex of the sawfish
- Remove small (0.5 cm) portion of caudal or anal fin for genetic sample
 - Store in a plastic bag, on ice or frozen if possible
 - Can be stored in ethanol
- Tag with spaghetti and PAT (satellite) tags when available
- Release sawfish with vessel out of gear

If boated dead

- Scan for PIT tags
 - Around the base of the dorsal fins
- Check for external tags
 - Around the base of the dorsal fins
- Take a precaudal length, a fork length, stretched total length and rostrum length measurement in cm
 - Straight line measurements
- Count the rostral teeth on either side of the saw
- Check the sex of the sawfish
- Remove small (0.5 cm) portion of caudal or anal fin for genetic sample
 - Store in a plastic bag, on ice or frozen if possible
 - Can be stored in ethanol
- Remove gonads, stomach, vertebrae (about 6-10 inches), the rostrum and all fins
 - Store in plastic bag, on ice or frozen
- Discard the remaining carcass

Send all samples to:

John Carlson
NMFS SEFSC Panama City Laboratory
3500 Delwood Beach Dr.
Panama City, FL 32408

Observer sampling protocol for Atlantic and Gulf sturgeon

If captured alive:

- Scan for PIT tags
 - Under dorsal fin, both sides
- Check for external tags
 - Under side of pectoral fins
- Take a fork length (FL) measurement in cm
 - Indicate whether measurement is straight line or curved
- Remove small (0.5 cm) portion of caudal or anal fin for genetic sample
 - Store in a plastic bag, on ice or frozen if possible
 - Can be stored in ethanol
- Remove 2 cm portion of 2nd marginal fin ray from left pectoral fin (see protocol)
 - Store dry in plastic bag or envelope

If captured dead

- Scan for PIT tags
 - Under dorsal fin, both sides
- Check for external tags
 - Under side of pectoral fins
- Take a fork length (FL) measurement in cm
 - Indicate whether measurement is straight line or curved
- Remove pectoral fin
 - Store dry in plastic bag or envelope
- Remove gonads
 - Store in plastic bag, on ice or frozen

Send all samples to:

Ivy Baremore
NMFS SEFSC Panama City Laboratory
3500 Delwood Beach Dr.
Panama City, FL 32408

Removal of the second marginal fin ray from the pectoral fin of Gulf and Atlantic sturgeon:

Tools:

Scalpel w/ size 10 blade

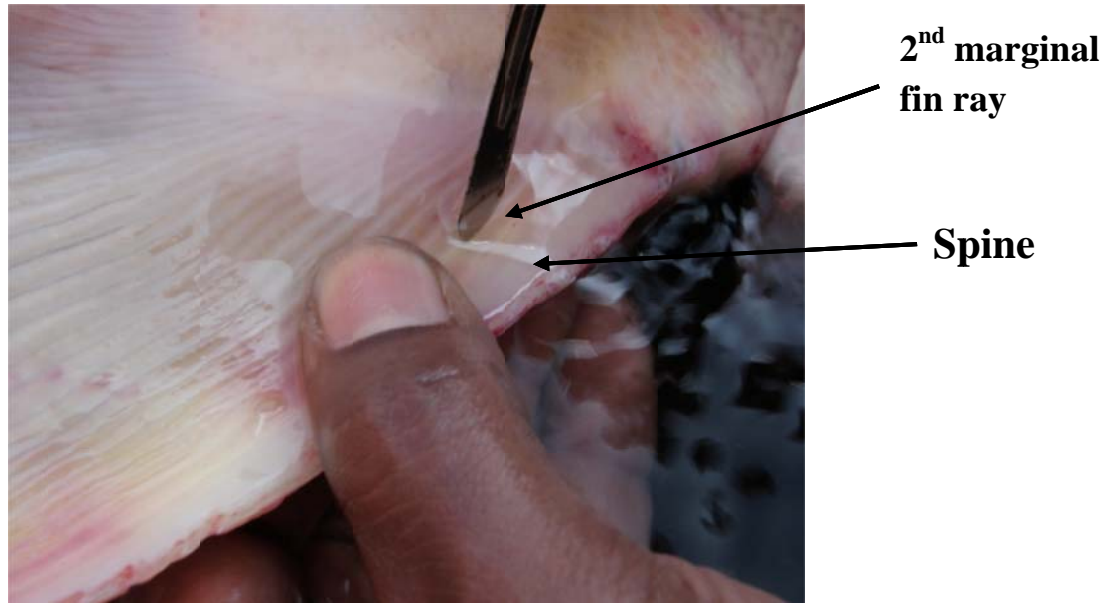
Wire Cutters

Forceps

Protocol for LIVE sturgeon



With ventral side up, make a 2 cm incision (parallel to the fin ray) between the 2nd marginal fin ray and the “spine” or 1st marginal fin ray of the pectoral fin. This should be done approximately 2 cm from the base of the pectoral fin.



Make similar incision between the 2nd and 3rd marginal fin rays.



Use forceps to hold the now separated fin ray, then use wire cutters to snip each end of the cut.



Use forceps to completely remove fin ray. Place in labeled plastic bag and store on ice.



The finished product should look like this, or with even a smaller removal.

7_12

deg . decimal min
